

Automation & Control
Telemecanique
The essential guide

2006



New telemecanique.com portal

This international site allows you to access all the Telemecanique products in just 2 clicks via comprehensive range data-sheets, with direct links to:

- Complete library : technical documents, catalogs, certificates, FAQs, brochures...
- Selection guides from the e-catalog
- Product discovery sites and their Flash animations

You will also find illustrated overviews, news to which you can subscribe, a discussion forum, the list of country contacts...

To live automation solutions every day!

Product index

Functions discovery

Product data-sheet

E-catalog

Library

New, icons at the bottom of the pages in your essential guide!

Simply click on this icon to obtain direct access to all the information that interests you, on any product, via the website:

www.telemecanique.com

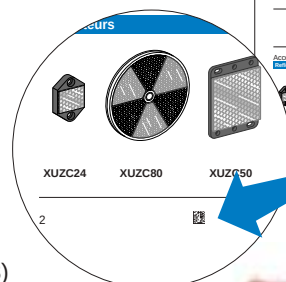
This way you can easily access from a product sheet the following items:

- the electronic catalogue
- the website dedicated to that product
- a comprehensive library in which you will find brochures, catalogues, technical documentation (user guides, technical manuals, etc.) linked to that particular product.

Osiris		Photo-electric sensors	
Universal		Universal	
  		  	
Design 18 plate		Design 18 metal	
Max. visible sensing distance		Max. visible sensing distance	
without assembly: 0.5 to 3 m with assembly: 0.5 to 3 m with reflective plate: 0.5 to 3 m with reflective plate: 0.5 to 3 m		without assembly: 0.5 to 3 m with assembly: 0.5 to 3 m with reflective plate: 0.5 to 3 m with reflective plate: 0.5 to 3 m	
Working range		Working range	
Case M (cable P-groove): 0.5 to 3 m or 0.5 to 3 m Standard dimensions: 0.5 to 3 m		Case M (cable P-groove): 0.5 to 3 m or 0.5 to 3 m Standard dimensions: 0.5 to 3 m	
Sensors for DC applications		Sensors for DC applications	
Connection: 1 x 18 pins Programming: 18 pins Connection: 1 x 18 pins Programming: 18 pins		Connection: 1 x 18 pins Programming: 18 pins Connection: 1 x 18 pins Programming: 18 pins	
Sensors for AC applications		Sensors for AC applications	
Connection: 1 x 18 pins Programming: 18 pins Connection: 1 x 18 pins Programming: 18 pins		Connection: 1 x 18 pins Programming: 18 pins Connection: 1 x 18 pins Programming: 18 pins	
Multi-current/multi-voltage sensors for AC/DC applications		Multi-current/multi-voltage sensors for AC/DC applications	
Connection: 1 x 18 pins Programming: 18 pins Connection: 1 x 18 pins Programming: 18 pins		Connection: 1 x 18 pins Programming: 18 pins Connection: 1 x 18 pins Programming: 18 pins	

How to proceed

- To order the clicker (reader), please consult your Sales Office (reference: DIA1GD0040601 - art: 960013)
- Click on the icon printed at the bottom of the pages
- The product sheet corresponding to the page then opens automatically with all the information relating to that product, therefore saving you a considerable amount of research time.



Click on the icon and straight away you will get the web sheet for the product corresponding to that page.

I ntroduction

Telemecanique,

- the Schneider Electric brand for Automation & Control.
- innovative products...

Detection ■ Photo-electric sensors ■ Inductive proximity sensors ■ Limit switches ■ Sensors for pressure control	1
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Automation ■ Relays ■ Programmable controllers & Automation platforms ■ Distributed Inputs/Outputs	3
Motion and Drives ■ Soft starters ■ Variable speed drives ■ Motion modules ■ Lexium servo drives for SER, BPH and BPL servo motors	4
Motor control ■ Motor control components ■ Components for power control applications	5
Power supplies Power supplies and transformers for control circuits	6
Interfaces and I/O ■ Connection ■ Interfaces and distributed Inputs/Outputs	7
AS-Interface cabling system ■ The cabling system that meets your needs for industrial automation systems	8
Machine safety ■ Safety solutions provide maximum protection in all the safety functions of your automation system	9
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Schneider worldwide ■ Address	

Telemecanique, the Schneider Electric brand for Automation & Control

Used together or separately, Telemecanique products can provide complete functionalities for all of your industrial, building, infrastructure, and energy automation applications.



Known for its quality and innovation for over 80 years, Telemecanique offers a wide range of products in over 130 countries around the world.

TeSys motor starters
Altivar drives
Altistart soft starters
Lexium motors and servo-drives
Advantys distributed I/O
Zelio relays and **Twido** controllers
Modicon PLCs
Unity automation hardware and software solution (NEW !)
Magelis operator terminals
Harmony control and signalling units
Osiconcept sensors
Preventa safety solutions
etc.

Simply Smart !

Leveraging ingenuity and intelligence for ease of use

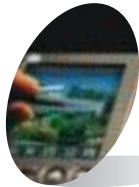


Simplicity

- Cost effective “optimum” offers that make selection easy for most typical applications
- Products that are easy to understand for users, electricians and automation specialists
- User-friendly intuitive programming,

...for example
Zelio Logic

Easy programming directly on the smart module with either the Compact or Modular versions, or via PC using FBDs or Ladder Logic. Control of applications by simply sending an SMS...



Ingenuity

- Auto-adapts to its environment, “plug & play”
- Application functions, control, communication and diagnostics embedded in the products
- User-friendly operation either directly on the product or remotely

...for example
Altivar 71

“Plug & drive” speed drive with functionality adapted specifically for pumps and fans, solutions with harmonics protection and PowerSuite software for pocket PCs, perfectly suited for building applications!



Flexibility

- Interchangeable modular functions, to better meet the requirements for extensions
- Software and accessories common to multiple product families

...for example
Twido

Programmable controller with “compact” or “modular” versions to better meet your needs. Its flexibility enables you to add options like a display, communication bus, more memory,....



Openness

- Compliance with field bus, connection, and software standards
- Enabling decentralised or remote surveillance via the web with **Transparent Ready** products

...for example
TeSys U

The first starter controller to integrate motor power and control functions, adaptable to a variety of standard buses, and permits you to transparently monitor applications via the web.



Compactness

- High functionality in a minimum of space
- Freedom in implementation

...for example
Magelis XBT GT

Besides the fact that it is the most compact semi-graphic display on the market, it offers a high degree of legibility, configurable keys, and multi-language management capabilities.



Telemecanique,

innovative products for all **Automation & Control** functions.

Machine safety

See **Machine safety**
in each function

AS-Interface

See **AS-Interface**
in each function

Systems & Architectures

Operator dialog



Interfaces & I/O

Detection

Interfaces & I/O

Connectors

Cable-ends, terminal blocs

Interfaces

Plug-in relays, analog
converters, discrete
interfaces

Pre-wired interfaces,
IP20/IP67 distributed I/O

AS-Interface

IP20/IP67 interfaces,
cables, repeaters,
accessories, addressing and
adjustment terminals

Machine safety

Safety monitors and
controllers on AS-Interface

Software

Software to design and
install AS-Interface system,
safety monitors and
controllers on AS-Interface
programming software

Detection

Sensors

Limit switches
Proximity sensors
Photo-electric and ultrasonic
sensors
Pressure switches
Rotary encoders

RFID, vision

Inductive identification
Vision system

Machine safety

Switches, light curtains,
mats

Software

Safety mats configuration
software

Operator dialog

Control & signalling units

Control and signalling units,
cam switches
Beacons and indicator banks

Human machine interfaces

Operator interface terminals,
industrial PCs, Web servers,
HMI and SCADA PC-based
software

Control stations, mounting solutions

Control and pendant
stations, front panels
mounting kits

AS-Interface

Control stations, keypads,
beacons

Machine safety

Emergency stops, control
stations, enabling switches,
foot switches

Software

Operator terminal software

Mounting systems

Mounting systems

Enclosures

Wall mounted enclosures
Floor standing enclosures,
suite type cubicles
Industrial boxes

Equipment and accessories

Thermal control equipment
Power splitter blocks
Mounting accessories

Systems & Architectures

Connecting Ethernet devices

Web-enabling PLCs on Ethernet

Application protocols and field buses

Simply Smart !

Software tools



Motion and Drives



Automation



Motor control



Power supplies

Automation

Relays

Plug-in relays, electronic timers, control relays, counts
Smart relays

PLCs, PC based control, distributed I/O

Programmable controllers
PLC platforms
PC based control
Distributed I/O, I/O controllers

AS-Interface

Master modules for Modicon PLCs

Machine safety

Safety PLCs, controllers and modules

Software

PLCs and safety controllers programming software

Software tools

Global software
Generation of application systems
Application control
Collaborative development

Dedicated software
See **Software** in other functions

Power supplies

Power supplies

Switch mode power supplies
Filtered rectified power supplies, transformers

AS-Interface

Power supplies

Motion and Drives

Starters, drives and servo drives

Soft starters
Variable speed drives
Motion modules
Servo drives
Servo motors

Software

Software for drives and motors

Motor control

Motor starters

Contactors
Circuit breakers, fuse carriers
Thermal relays
Combinations, motor controllers

Mounting solutions

Motor starter mounting kit

AS-Interface

Motor controllers, enclosures, variable speed drives

Machine safety

Switch disconnectors, thermal-magnetic motor circuit breakers, enclosed starters

Software

Motor control programming software

A complete range of innovative and much more simple to use sensors

Benefit from Telemecanique's major innovation:

Osiconcept®

Offering simplicity through innovation

A worldwide detection first for improving productivity.

A complete offer for resolving your most commonly encountered detection problems:

- product selection simplified
- product availability simplified
- installation and setting-up simplified
- maintenance simplified
- detection simplified using a single supplier.

Improved simplicity for improved productivity.

Osiconcept

Improve performance by making your machines *less complicated* and *more intelligent*.

Improve customer expertise with an efficient product line offering *simplified* selection and improved selling potential.

Reduce maintenance time with products that are *simpler* and unequalled in *flexibility*.



Select the sensor according to your specific requirements

"Universal" series:

Multi-purpose products providing multiple functions.
Osiconcept products are included in this series.

"Optimum" series:

Designed for essential and repetitive functions.

"Application" series:

Offers functions specifically for specialist needs, thus providing the ideal solution for your more complex applications.

The essential guide

A selection of 1430 products, with the top 560 selling products referenced in bold characters.

Contents

> A single product that automatically adapts to all conditions



> A single product that automatically adapts to all installation environments



> A single product that automatically learns both its detection mode and detection zone



> Simple parametering of many different resolutions on the same product



> Availability of more than 5,000 interchangeable configurations within 24 hours



> A user-friendly product at last; easy to parameter prior to installation and to modify during operation



■ Osiris Photo-electric sensors 1/2 to 1/13

Detection without contact of objects whatever their shape or material

- > Detection from a few millimetres to several tens of metres
- > 3D adjustable fixing accessories
- > Specific products for particular applications

■ Osiprox Inductive proximity sensors 1/14 to 1/24

Detection without contact of metal objects

- > Sensor / object distance ≤ 60 mm
- > Generic cylindrical and flat form products
- > Specific products for particular applications

■ Osisonic Ultrasonic sensors 1/26 and 1/27

Detection without contact of any object of any material

- > Detection from a few millimetres up to 8 metres
- > Extra large range to ensure finding the right product
- > Specific products for particular applications

■ Osicoder Rotary encoders 1/28 and 1/29

Opto-electronic detection

- > Incremental
- > Absolute - single turn and multiturn
- > PROFIBUS and CANopen fieldbus communicating

■ Osiswitch Limit switches 1/30 to 1/39

Detection by contact of rigid objects

- > Positive opening operation of electrical contacts
- > Object speed ≤ 1.5 m/s
- > Specific products for particular applications

■ Nautilus Sensors for pressure control 1/40 to 1/45

Detection by contact with fluid

- > Electronic pressure and vacuum switches
- > Analogue pressure sensors
- > Electromechanical pressure and vacuum switches

Other detection technologies

■ Osiprox Capacitive proximity sensors 1/25

■ Osiview Vision system 1/46

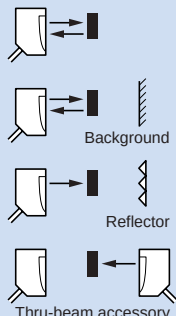
Complete industrial vision system comprising: controllers, lenses, cameras, lighting systems, accessories, etc.

■ Inductel Inductive identification 1/47

Complete inductive identification system provided by a complete range of tags, inductive heads and stations

■ Sensors for explosive atmospheres

(see chapter 10 "Explosive Atmospheres")



Osiconcept®
Offering simplicity through Innovation

A single product that automatically adapts to all conditions.

Programmable NO / NC
NO: object present = output ON
NC: no object present = output ON



Osiconcept®



Osiconcept®

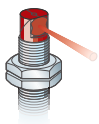
		Design 18 plastic	Design 18 metal
Max. / usable sensing distance	without accessory	0.4 / 0.3 m	0.4 / 0.3 m
	w/o accessory, with background supp	0.12 / 0.12 m	0.12 / 0.12 m
	with reflector (polarised)	3 / 2 m	3 / 2 m
	with thru-beam accessory	20 / 15 m	20 / 15 m
Fixing (mm)		M18 x 1	M18 x 1
Case M (metal) P (plastic) / Dimensions (mm) Ø x L or W x H x D		P / M18 x 64	M / M18 x 64
Common characteristics		Adjustment of sensing distance: using teach mode / Setting-up assistance LEDs (⊗): yes / Temperature	

Sensors for DC applications (solid-state output: transistor)

Connection		Pre-cabled, PvR (2 m)	
T / R 3-wire	PNP programmable NO / NC	XUB0APSNL2	XUB0BPSNL2
	NPN programmable NO / NC	XUB0ANSNL2	XUB0BNSNL2
	PNP / NPN programmable NO / NC	—	—
Connection		M12 connector 	
T / R 3-wire	PNP programmable NO / NC	XUB0APSNM12	XUB0BPSNM12
	NPN programmable NO / NC	XUB0ANSNM12	XUB0BNSNM12
	PNP / NPN programmable NO / NC	—	—
Connection		Screw terminals	
T / R 3-wire	PNP / NPN programmable NO / NC	—	—
	Switching capacity (mA) main output / alarm output	100 / —	100 / —
Common characteristics		Supply voltage limits, min./max. (V) including ripple: 10...36 (except XUM 10...30) / Switching	
Thru-beam transmitter accessory	pre-cabled (2 m)	XUB0AKSNL2T	XUB0BKSNL2T
	connector	XUB0AKSNM12T	XUB0BKSNM12T
	screw terminals, ISO 16 cable gland	—	—

Multi-current/multi-voltage sensors for AC/DC applications 10...36 V DC / 20...264 V AC including ripple on DC (relay output, 1 NC/NO, 3 A)

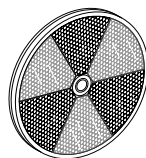
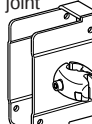
Connection		Pre-cabled, PvR (2 m)	
T / R	programmable, NO/NC with time delay	—	—
Connection		Screw terminals	
T / R	programmable, NO/NC with time delay	—	—
LED output state indicator (⊗) / power on LED (⊗)		—	—
Switching frequency (Hz)		—	—
Time delay(s)		—	—
Thru-beam accessory	pre-cabled, PUR (2 m)	—	—
	screw terminals, ISO 16 cable gland	—	—



90° head

All the above Osiris Design 18 sensors are available with an integral 90° head.
To order, replace the letter "N" in the reference by "W".
Example: For pre-cabled versions: XUB0APSNL2 becomes XUB0APSWL2.
For connector versions: XUB0APSNM12 becomes XUB0APSWM12.
Sensing distances: refer to www.Telemecanique.com

Accessories

Reflectors			3D fixings with ball joint		
			Reflectors (mm)		
			Ø 21	XUZC21	
			24 x 21	XUZC24	
			Ø 31	XUZC31	
			Ø 39	XUZC39	
			Ø 80	XUZC80	
			50 x 50	XUZC50	
100 x 100	XUZC100				
			Bracket with ball joint for sensors and reflector XUZC50		
			for		
			XUB...	XUZB2003	
			XUM...	XUZM2003	
			XUK...	XUZK2003	
			XUX...	XUZX2003	
			for		
			XUM...	XUZM2004	
			XUK...	XUZK2004	
			XUX...	XUZX2004	
			XUX...	XUZX2004	
			XUZ2001		



Osiconcept®



Osiconcept®



Osiconcept®

Miniature design	Compact design 50 x 50	Compact design
0.55 / 0.4 m	1.2 / 0.8 m	3 / 2 m
0.10 / 0.10 m	0.3 / 0.3 m	1.3 / 1.3 m
4 / 3 m	5.7 / 4 m	15 / 11 m
14 / 10 m	35 / 30 m	60 / 40 m
direct: fixing centres 25.5, M3 screws	direct: fixing centres 40 x 40, M4 screws	direct: fixing centres 30 / 38 to 40 / 50 / 74, M5 screws
P / 12 x 34 x 20	P / 18 x 50 x 50	P / 30 x 92 x 71
range (°C): - 25...+ 55 / Degree of protection (conforming to IEC 60529): IP 65, IP 67 (XUK: IP 65)		

XUM0APSAL2	–	–
XUM0ANSAL2	–	–
–	XUK0AKSAL2	–
M8 connector	M12 connector	–
XUM0APSAM8 (1)	–	–
XUM0ANSAM8 (1)	–	–
–	XUK0AKSAM12	XUX0AKSAM12
–	–	XUX0AKSAT16
100 / 50	100 / 50	100 / 100
frequency (Hz): 250 / Overload and short-circuit protection (★) / LED output state indicator (⊗): yes / power on LED (⊗): yes		
XUM0AKSAL2T	XUK0AKSAL2T	–
XUM0AKSAM8T (1)	XUK0AKSAM12T	XUX0AKSAM12T
–	–	XUX0AKSAT16T

(1) M8 not Snap-C® compatible.

–	XUK0ARCTL2	–
–	–	XUX0ARCTT16
–	⊗ / ⊗	⊗ / ⊗
–	20	20
–	Adjustment from 0 to 15 s, on energisation, on de-energisation or monostable	–
–	XUK0ARCTL2T	–
–	–	XUX0ARCTT16T

**Connector innovation**

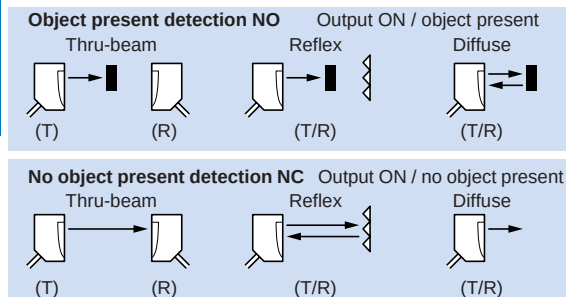
New, innovative connector that is universal, simple and fast.

For all Telemecanique sensors with Snap-C compatible M12 connectors:

- cabling to the required length without using a screwdriver or a soldering iron,
- ready in just a few seconds, no wire stripping required.



Simple fixings			Suitable female plug-in connectors, including pre-wired versions				
Single bracket							
Fixing support for M12 rod XUZ2003	for	standard	with ball joint				
	XUB...	XUZA118 (stnls. steel)	XUZA218 (plastic)				
	XUM...	XUZA50	–				
	XUK...	XUZA51	–				
	XUX...	XUZX2000	–				
			length 5 m without LED	pre-wired, elbowed	pre-wired, straight	screw terminal	Snap-C
			M8	XZCP1041L5	XZCP0941L5	XZCC8FCM40S	–
			M12	XZCP1241L5	XZCP1141L5	XZCC12FCM40B	XZCC12FDM40V



		Design 18 plastic	Design 18 metal
Max. / usable sensing distance	Diffuse	0.8 / 0.6 m	0.8 / 0.6 m
	Polarised reflex	3 / 2 m	3 / 2 m
	Reflex	5.5 / 4 m	5.5 / 4 m
	Thru-beam	20 / 15 m	20 / 15 m
Fixing (mm)		M18 x 1	M18 x 1
Case M (metal) P (plastic) / Dimensions (mm) Ø x L or W x H x D		P / M18 x 46	M / M18 x 46
Setting-up assistance LEDs ☒		—	—
Common characteristics		Temperature range (°C): - 25...+ 55 / Degree of protection (conforming to IEC 60529): IP 65, IP 67	

Sensors for DC applications (solid-state output: transistor)

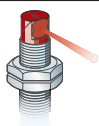
Connection	Pre-cabled, PvR, L = 2 m	M12 connector (1)	Pre-cabled, PvR, L = 2 m	M12 connector (1)
Transmitter	XUB2AKSNL2T	XUB2AKSNM12T	XUB2BKSNL2T	XUB2BKSNM12T
Receiver or T/R, 3-wire PNP (1)	Diffuse, adjustable	NO	XUB5APANL2	XUB5APANM12
			NC	XUB5APBNM12
	Polarised reflex	NO	XUB9APANL2	XUB9APANM12
			NC	XUB9APBNM12
	Reflex	NO	XUB1APANL2	XUB1APANM12
			NC	XUB1APBNM12
	Thru-beam	NO	XUB2APANL2R	XUB2APANM12R
			NC	XUB2APBNM12R
Supply voltage limits, min./max. (V) including ripple	10...36	10...36	10...36	10...36
Switching frequency (Hz)	500	500	500	500
Common characteristics for DC versions	Switching capacity, max. (mA): 100 / Overload and short-circuit protection (★) / LED output state			

(1) For versions with NPN output, replace "P" by "N". Example: XUB1APANL2 becomes XUB1ANANL2.

Multi-current/multi-voltage sensors for AC/DC applications 10...36 V DC / 20...264 V AC including ripple on DC (relay output, 1 NC/NO, 3 A)

Connection	—	—	—	—
Transmitter	—	—	—	—
Receiver or T/R	Diffuse	NO + NC	—	—
	Polarised reflex	NO + NC	—	—
	Reflex	NO + NC	—	—
	Thru-beam	NO + NC	—	—
Switching frequency (Hz)	—	—	—	—
LED output state indicator (☒) / power on LED (☒)	—	—	—	—

Also available in Design 18, 2-wire type multi-current/multi-voltage a.c./d.c. version. Please refer to www.Telemecanique.com



90° head

All the above Osiris Design 18 sensors are available with an integral 90° head. To order, replace the letter "N" in the reference by "W".
Example: For pre-cabled versions: XUB0APSNL2 becomes XUB0APSWL2.
For connector versions: XUB0APSNM12 becomes XUB0APSWM12.
Sensing distances: refer to www.Telemecanique.com

Accessories

Reflectors

Reflectors (mm)	
Ø 21	XUZX21
24 x 21	XUZX24
Ø 31	XUZX31
Ø 39	XUZX39
Ø 80	XUZX80
50 x 50	XUZX50
100 x 100	XUZX100

3D fixings with ball joint

	Bracket with ball joint for sensors and reflector XUZX50		Protective housing with ball joint		M12 rod for ball joint
	for	XUB... XUZX2003	for	XUM... XUZX2004	
	XUM... XUZX2003		XUK... XUZX2004		
	XUX... XUZX2003		XUX... XUZX2004		XUZX2001



Miniature design	Compact design 50 x 50	Compact design
0.6 / 0.4 m	1.5 / 1 m DC or AC	3 / 2.1 m
3 / 2 m	7.5 / 5 m DC or 6 / 4 m AC	15 / 11 m
6 / 4 m	15 / 9 m DC or 10 / 7 m AC	20 / 14 m
12 / 8 m	45 / 30 m DC or 30 / 20 m AC	60 / 40 m
direct: fixing centres 25.5, M3 screws	direct: fixing centres 40 x 40, M4 screws	direct: fixing centres 30 / 38 to 40 / 50 / 74, M5 screws
P / 12 x 34 x 27	P / 18 x 50 x 50	P / 30 x 92 x 71
⊗	⊗	⊗
(XUK: IP 65) / LED output state indicator and power on LED (⊗): yes		

Pre-cabled, PvR, L = 2 m	M8 connector	Pre-cabled, PvR, L = 2 m	M12 connector (1)	Screw trmls., ISO 16 cbl.gland	M12 connector (1)
XUM2AKSNL2T	XUM2AKSNM8T	XUK2AKSNL2T	XUK2AKSNM12T	XUX0AKSAT16T	XUX0AKSAM12T
XUM5APANL2	XUM5APANM8	XUK5APANL2	XUK5APANM12	XUX5APANT16	XUX5APANM12
XUM5APBNL2	XUM5APBNM8	XUK5APBNL2	XUK5APBNM12	XUX5APBNT16	XUX5APBNM12
XUM9APANL2	XUM9APANM8	XUK9APANL2	XUK9APANM12	XUX9APANT16	XUX9APANM12
XUM9APBNL2	XUM9APBNM8	XUK9APBNL2	XUK9APBNM12	XUX9APBNT16	XUX9APBNM12
XUM1APANL2	XUM1APANM8	XUK1APANL2	XUK1APANM12	XUX1APANT16	XUX1APANM12
XUM1APBNL2	XUM1APBNM8	XUK1APBNL2	XUK1APBNM12	XUX1APBNT16	XUX1APBNM12
XUM2APANL2R	XUM2APANM8R	XUK2APANL2R	XUK2APANM12R	XUX2APANT16R	XUX2APANM12R
XUM2APBNL2R	XUM2APBNM8R	XUK2APBNL2R	XUK2APBNM12R	XUX2APBNT16R	XUX2APBNM12R
10...30	10...30	10...30	10...30	10...36	10...36
500	500	500	500	500	500
indicator (⊗): yes / power on LED (⊗): yes					

–	–	Pre-cabled, L = 2 m	–	Screw trmls., ISO 16 cbl.gland	–
–	–	XUK2ARCNL2T	–	XUX0ARCTT16T	–
–	–	XUK5ARCNL2	–	XUX5ARCNT16	–
–	–	XUK9ARCNL2	–	XUX9ARCNT16	–
–	–	XUK1ARCNL2	–	XUX1ARCNT16	–
–	–	XUK2ARCNL2R	–	XUX2ARCNT16R	–
–	–	20	–	20	–
–	–	⊗ / ⊗	–	⊗ / ⊗	–



(1) Connector innovation

New, innovative connector that is universal, simple and fast.

For all Telemecanique sensors with Snap-C compatible M12 connectors:

- cabling to the required length without using a screwdriver or a soldering iron,
- ready in just a few seconds, no wire stripping required.



Simple fixings			Suitable female plug-in connectors, including pre-wired versions				
Single bracket							
Fixing support for M12 rod XUZ2003	for		length 5 m without LED				
		standard	pre-wired, elbowed		pre-wired, straight		
	XUB...	XUZA118 (stnls. steel)	XZCP1041L5		XZCP0941L5		
	XUM...	XUZA50	XZCP1241L5		XZCP1141L5		
	XUK...	XUZA51			XZCC8FCM40S		
	XUX...	XUZX2000			XZCC12FCM40B		
					XZCC12FDM40V		



System	Thru-beam	Reflex	Polarised reflex	Diffuse	Diffuse with background suppression
Max. / usable sensing distance	11 / 8 m	9 / 6 m	6 / 4 m	0.9 / 0.7 m	0.25 m fixed range
Fixing (mm)	Direct, fixing centres 28 mm, M 3 screws				
Sensitivity adjustment	–	–	–	potentiometer	potentiometer
Case P (plastic)	P				
Temperature range (°C)	- 25...+ 55°C				
Degree of protection (conforming to IEC 60529)	IP 67				

Sensors for DC applications (solid-state output: transistor)

Connection				Pre-cabled, PVC (2 m)				
Dimensions (mm) H x W x D				70 x 18 x 35				
References	3-wire PNP	programmable	NO / NC	XULH083534	XULH06353	XULH043539	XULH703535	–
	3-wire NPN	programmable	NO / NC	XULJ083534	XULJ06353	XULJ043539	XULJ703535	–
	Transmitter			XULK0830	–	–	–	–
Connection				M8 connector				
References	3-wire PNP	programmable	NO / NC	XULH083534D	XULH06353D	XULH043539D	XULH703535D	–
	3-wire NPN	programmable	NO / NC	XULJ083534D	XULJ06353D	XULJ043539D	XULJ703535D	–
	Transmitter			XULK0830D	–	–	–	–
Supply voltage limits, min./max. (V)				10...30 including ripple				
Switching capacity, max.				≤ 200 mA with short-circuit protection				
Switching frequency (Hz)				250				
LED output state indicator (⊗) / power on LED (⊗)				⊗ / –	⊗ / –	⊗ / –	⊗ / –	–

Multi-current/multi-voltage sensors for AC/DC applications 10...36 V DC / 20...264 V AC including ripple on DC, NC/NO relay output

Connection				Pre-cabled, PVC (2 m)				
Dimensions (mm) H x W x D				70 x 18 x 45				
References	3-wire PNP programmable		NO / NC	XULM080314	XULM06031	XULM040319	–	XULM300318
	Transmitter			XULM0600	–	–	–	–
Switching capacity, max.				2000 mA (cos φ = 1), 500 mA (cos φ = 0.4)				
Switching frequency (Hz)				20				
LED output state indicator (⊗) / power on LED (⊗)				⊗ / –	⊗ / –	⊗ / –	– / –	⊗ / –



Miniature series sensors

System	Polarised reflex 50 x 50 reflector included	Thru-beam	Background suppression
Sensing distance	1...1.5 m	4 m	1.5...80 mm
Fixing (mm)	2 x Ø 3 holes / centres 9.5	3 x Ø 3 holes / centres 9.5	2 x Ø 3 holes / centres 14.5
Sensitivity adjustment	potentiometer	potentiometer	potentiometer
Case M (metal) P (plastic) / Setting-up assistance LEDs ⊗	P / ⊗	P / ⊗	P / ⊗
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	0...+50 / IP 65 & IP 67	0...+50 / IP 65 & IP 67	0...+50 / IP 65 & IP 67
Dimensions (mm) W x H	10 x 40	10 x 40	20 x 32

Sensors for DC applications (solid-state output: transistor)

Connection				M8 connector (1)	M8 connector (1)	M8 connector (1)
Type of output	PNP	NO function	XUYBCO989SP	XUYRCO989SP (receiver)	XUYPCO989SP	XUYPCO989SP
	NPN	NO function	XUYBCO989SN	XUYRCO989SN (receiver)	XUYPCO989SN	XUYPCO989SN
	PNP/NPN	Programmable NO / NC	–	XUYECO989 (transmitter)	–	–
Supply voltage limits, min./max. (V) including ripple				10...30	10...30	10...30
Switching capacity, max. (mA) / Switching frequency (Hz)				100 / 500	100 / 500	100 / 500
Overload and short-circuit protection (★) / LED output state indicator (⊗)				★ / ⊗	★ / ⊗	★ / ⊗ ★ / ⊗

(1) Pre-cabled version available (2 m). To order, delete the letters CO from the reference. Example: XUYPCO989SP becomes XUYPS989SP.

Photo-electric sensors

Laser



1



System	Reflex	Contrast miniature sensor	Diffuse with background suppression	
			Sensing distance 1	Sensing distance 2
Sensing distance	10...1000 mm	40...150 mm	10...60 mm	30...110 mm
Minimum object size	0,7 mm	0,7 mm	0,3 mm	0,7 mm
Fixing (mm)	Direct, 2 x M3 holes, fixing centres 24 mm			
Sensitivity adjustment	teach mode			
Case P (plastic) / Setting-up assistance LEDs (⊗)	P			
Temperature range (°C)	- 20...+ 60°C			
Degree of protection (conforming to IEC 60529)	IP 67			
Dimensions (mm) L x H x W	20 x 35.8 x 12			

Sensors for DC applications (solid-state output: transistor)

Connection			M8 connector			
Type of output	3-wire PNP	programmable NO/NC	XUYBCO929LSP	XUYPCO929LSP	XUYPCO929L1SP	XUYPCO929L2SP
Supply voltage limits, min./max. (V)	10...30 including ripple					
Switching capacity, max.	100					
Switching frequency (Hz)	1000					
Overload and short-circuit protection (★) / LED output state indicator (⊗)	★ / ⊗		★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗



Laser class II
Very long sensing distance or accurate sensing



System	Diffuse, analogue output 0 - 10 V		Thru-beam	Background suppression
	Sensing distance 1	Sensing distance 2		
Sensing distance	40...60 mm	45...85 mm	100 m	50...300 mm
Minimum object size	1 mm	0,8 mm	0,5 mm	0,5 mm
Fixing (mm)	Direct, 3 x M4 holes, fixing centres 40 mm		M 18 x 1	Direct, 2xM4 holes, ctrs. 54 mm
Sensitivity adjustment	potentiometer		potentiometer	potentiometer
Case P (plastic) / Setting-up assistance LEDs (⊗)	P / ⊗	P / ⊗	P / ⊗	P / ⊗
Temperature range (°C)	0...+ 45°C	0...+ 45°C	- 10...+ 45°C	0...+ 50°C
Degree of protection (conforming to IEC 60529)	IP 67	IP 67	IP 67	IP 65
Dimensions (mm) L x H x W	50 x 50 x 17	50 x 50 x 17	Ø 18 x 76	60 x 60 x 18

Sensors for DC applications (solid-state output: transistor)

Connection			M12 connector	M12 connector	M12 connector	M8 connector
Type of output	PNP	programmable NO/NC	—	—	XU2P18PP340DL	—
	NPN	programmable NO/NC	—	—	XU2P18NP340DL	—
	PNP / NPN	programmable NO/NC	—	—	—	XUYPS1LCO965S
	0...10 V		XUYPCO925L1ANSP	XUYPCO925L2ANSP	—	—
Supply voltage limits, min./max. (V)	18...28 including ripple		10...30 including ripple			
Switching capacity, max.	3 mA / analogue output 0...10 V		100		100	
Switching frequency (Hz)	40		500		5000	
Overload and short-circuit protection (★) / LED output state indicator (⊗)	★ / ⊗		★ / ⊗		★ / ⊗	

Note: laser fork version also available, see page 12.



	Optimum +/- potentiometer	Teach	Universal Teach + Timer	Teach+Timer+Speed dspy.
Max. / usable sensing distance	Depending on fibre used, plastic only			
Fixing (mm)	DIN rail or direct: fixing centres 25, M3 screws			
Sensitivity adjustment	+/- numeric potentiometer	using teach mode	+/- numeric potentiometer	using teach mode
Case M (metal) P (plastic) / Setting-up assistance LEDs ☉	P / ☉	P / ☉	P / ☉	P / ☉ and 4-digit display
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	0...+60 / IP 65	- 10...+ 55 / IP 65 (1)	0...+60 / IP 65	- 10...+ 55 / IP 65 (1)
Dimensions (mm) L x H x W	60 x 30 x 13	65 x 40 x 10	60 x 30 x 13	65 x 40 x 10

Sensors for DC applications (solid-state output: transistor)

Connection				Pre-cabled, PVC (2 m)			
References	3-wire PNP programmable	NO / NC	–	–	XUDA1PSML2	–	XUDA2PSML2
Amplifier	3-wire NPN programmable	NO / NC	–	–	XUDA1NSML2	–	XUDA2NSML2
Connection				M8 connector			
References	3-wire PNP programmable	NO / NC	–	–	XUDA1PSMM8	–	XUDA2PSMM8
Amplifier	3-wire NPN programmable	NO / NC	–	–	XUDA1NSMM8	–	XUDA2NSMM8
	3-wire PNP/NPN programmable	NO / NC	XUYAFVCO966S (Glass)	–	XUYAFVCO946S (Glass)	–	XUYAFPCO966S (Plastic)
			XUYAFPCO966S (Plastic)	–	XUYAFPCO946S (Plastic)	–	
Supply voltage limits, min./max. (V) including ripple				10...30	10.8...26.4	10...30	10.8...26.4
Switching capacity, max. (mA) / Switching frequency (Hz)				100 / 1000	100 / 1000	100 / 1000 time delayable	100 / 1000 time delayable
Overload and short-circuit protection (★) / output state LED (☉)				★ / ☉	★ / ☉	★ / ☉	★ / ☉

(1) IP 65 with Ø 1 fibre / IP 64 with Ø 0.5 fibre.

Ecofibre system, assemble your own fibres



Fibre	
Ø 1 mm Length = 20 m	XUFZ920



End fittings	70	200	800	1200	4000	1200
Sensing distance (mm)	70	200	800	1200	4000	1200
Type	with threaded end fitting	with plain end fitting, Ø 3, L = 9 mm	with plain end fitting, Ø 3, L = 9 mm	with threaded end fitting	with threaded end fitting	90° mirror, with threaded end fitting
Thread	M8 x 1, L = 10 mm	–	–	M6 x 1, L = 10 mm	M12 x 1, L = 25 mm	M6 x 1, L = 3 to 10 mm
Lens	yes	no	yes	yes	yes	yes
References	XUYA110	XUYA210	XUYA211	XUYA212	XUYA213	XUYA220

Accessories

For thru-beam system plastic fibre optics

Lenses	For increasing sensing distance (pair) XUFZ01
With 90° mirror (pair) XUFZ02	
Fixing clamp with lens (set of 2)	Front screw fixing for fibre optics XUF-Z920 XUFZ04

For all system plastic fibre optics

Fibre trimmer	For trimming fibres to length (included with all fibre optics) XUFZ11
Protective metal tubing	Length 1 m, for fibres with threaded end fittings For M4 thread XUFZ210 For M6 thread XUFZ310

Plug-in pre-wired female connectors

Cable length 5 m, without LED	pre-wired, elbowed	pre-wired, straight
	XZCP1041L5	XZCP0941L5

Plastic fibre optic light guides (length 2 m)

1



Long range fibres

with integrated lens

Long range fibres

Flexible fibres

M4 / M2.6 (1)

M4 / L = 90 mm

M3 / M2.6 (1)

M8 / L = 20 mm

M4 / M2.6 (1)

M4 / M2.6 (1)

System	Thru-beam					
Sensing distance (mm)	200 or 1500 (1)	180	50 or 1000 (1)	2500	300 or 2000 (1)	100 or 750 (1)
Fibre cross-section						
Fibre Ø (mm)	Ø 1	Ø 1	Ø 0.5	Ø 1	Ø 1.5	Ø 1
Sheath Ø (mm)	Ø 2.2	Ø 2.2	Ø 1	Ø 2.2	Ø 2.2	Ø 2.2
Temperature range (°C)	- 25...+ 60	- 25...+ 60	- 25...+ 60	- 25...+ 60	- 25...+ 60	- 25...+ 60
References	XUFN12301	XUFN12311	XUFN35301	XUFN2L01L2	XUFN2P01L2	XUFN2S01L2
Fixing	M4 x 0.7	M4 x 0.7	M3 x 0.5	M8 x 1.25	M2.6 x 0.45 / M4 x 0.7	M2.6 x 0.45 / M4 x 0.7

(1) All models except XUFZ01 and XUFZ02.



M6



M4 / M6



M6/L = 90 mm



M4 / M2.6



M4/L = 90 mm

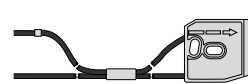
System	Diffuse				
Sensing distance (mm)	70	60	60	15	18
Fibre cross-section					
Fibre Ø (mm)	Ø 1	Ø 1 + 16 Ø 0.265	Ø 1	Ø 0.5 + 4 Ø 0.23	Ø 0.5
Sheath Ø (mm)	Ø 2.2 x 2	Ø 2.2 x 2	Ø 2.2 x 2	Ø 1 x 2	Ø 1 x 2
Temperature range (°C)	- 25...+ 60	- 25...+ 60	- 25...+ 60	- 25...+ 60	- 25...+ 60
References	XUFN05321	XUFN05323	XUFN05331	XUFN02323	XUFN01331
Fixing	M6 x 0.75	M6 x 0.75 / M4 x 0.7	M6 x 0.75	M4 x 0.7	M4 x 0.7



M4 / M2.6



Long range fibres
M6 / L = 15 mm



System	Diffuse		Diffuse focused for full colour sensor XURC4		
Sensing distance (mm)	18	95	20		30
Fibre cross-section					
Fibre Ø (mm)	Ø 0.5	Ø 1.5	Transmitter Ø 1.5	Receiver Ø 1.5	Transmitter and Receiver Ø 1.5
Sheath Ø (mm)	Ø 1 x 2	Ø 2.2 x 2	Ø 2.2 x 2		Ø 2.2 x 2
Temperature range (°C)	- 25...+ 60	- 25...+ 60	- 10...+ 55		- 10...+ 55
References	XUFN01321	XUFN5P01L2	XUFN5L02L2		XUFN5L03L2
Fixing	M4 x 0.7	M6 x 0.75	2 elongated holes Ø 3.2 x 6.7 for M3 screws / fixing centres = 9.8 mm		

Glass fibre optic light guides (length 0.6 m)



M4



M4 / Ø 2.5 x 89



M4



M4 / Ø 2.5 x 89



M4

System	Thru-beam		Diffuse			
Sensing distance (mm)	200		80			
Fibre cross-section						
End fitting	Straight	Adaptable	Straight	Adaptable	90°	
Fibre Ø (mm)	1		1			
Sheath Ø (mm)	2.2		2.2			
Temperature range (°C)	PVC sheath: - 25...+ 60°C / Metal wound: - 25...+ 120°C / Flexible stainless steel: - 25...+ 200°C					
References	PVC sheath	XUYFVERSD61	XUYFVERSC61	XUYFVPSD61	XUYFVPSC61	XUYFVPSL61
	Metal wound	XUYFVERMD61	XUYFVERMC61	XUYFVPMD61	XUYFVPMC61	XUYFVPMML61
	Flexible stnl. steel	XUYFVERTD61	XUYFVERTC61	XUYFVPTD61	XUYFVPTC61	XUYFVPTL61



	Colour mark readers			Luminescence sensors
	Diffuse	Diffuse (manual)	Diffuse (with teach mode)	Diffuse (manual)
Max. / usable sensing distance	0.019 m	0.009 m (1)	0.009 m (1)	0.02...0.08 m
Fixing (mm)	direct: fixing ctrs. 40 x 40	direct: 21 x 28, M5 screws	direct: 21 x 28, M5 screws	M18 x 1
Sensitivity adjustment potentiometer	with teach mode button		with teach mode button	
Case M (metal) P (plastic) / Setting-up assistance LEDs ☒	P / ☒	M / ☒	M / ☒	M / ☒
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	- 10...+ 55 / IP 65	- 10...+ 55 / IP 67	- 10...+ 55 / IP 67	- 25...+ 55 / IP 67
Dimensions (mm) Ø x L or H x W x D	50 x 15 x 50	100 x 30 x 62.5	96 x 31 x 64	Ø 18 x 95

Sensors for DC applications (solid-state output: transistor)

Connection	M12 connector	M12 connector	M12 connector	M12 connector
Transmitter / Receiver	3-wire PNP NO function	3-wire PNP NO function	3-wire PNP NO function	3-wire PNP NO function
	3-wire NPN NO function	3-wire NPN NO function	3-wire NPN NO function	3-wire NPN NO function
	3-wire PNP / NPN programmable NO / NC	3-wire PNP / NPN programmable NO / NC	3-wire PNP / NPN programmable NO / NC	3-wire PNP / NPN programmable NO / NC
Supply voltage limits, min./max. (V) including ripple	10...30	10...30	10...30	10...30
Switching capacity, max. (mA) / Switching frequency (Hz)	100 / 5000	200 / 10000	200 / 10000	100 / 1000
Overload and short-circuit protection (★) / LED output state indicator (☒)	★ / ☒	★ / ☒	★ / ☒	★ / ☒

Packaging series (continued)

Assembly series



	Detection of transparent materials	Objects on conveyor	Robustness and compactness
	Reflex (reflector not included)	Reflex (with teach mode) (50 x 50 reflector included)	Diffuse with adjustable b/ground suppression
Max. / usable sensing distance	1.1 / 0.8 m (2)	1.5 m	1 m
Fixing (mm)	M18 x 1	direct: fixing ctrs. 40 x 40	direct: fixing ctrs. 40 x 40
Sensitivity adjustment potentiometer		with teach mode button	
Case M (metal) P (plastic) / Setting-up assistance LEDs ☒	P / -	P / ☒	P / ☒
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	+ 10...+ 55 / IP 67	- 25...+ 55 / IP 65	- 25...+ 55 / IP 65
Dimensions (mm) Ø x L or H x W x L	Ø 18 x 55	50 x 18 x 80	50 x 18 x 50

Sensors for DC applications (solid-state output: transistor)

Connection	Pre-cabled, PVC (2 m)	Pre-cabled, PVC (2 m)	Pre-cabled, PVC (2 m)	Pre-cabled, PVC (2 m)
Transmitter / Receiver	3-wire PNP NO function	3-wire PNP NO function	3-wire PNP NO function	3-wire PNP NO function
	3-wire PNP programmable NO / NC	3-wire PNP programmable NO / NC	3-wire PNP programmable NO / NC	3-wire PNP programmable NO / NC
	3-wire NPN programmable NO / NC	3-wire NPN programmable NO / NC	3-wire NPN programmable NO / NC	3-wire NPN programmable NO / NC
	3-wire PNP / NPN programmable NO / NC	3-wire PNP / NPN programmable NO / NC	3-wire PNP / NPN programmable NO / NC	3-wire PNP / NPN programmable NO / NC
Connection	M12 connector	M12 connector	M12 connector	M8 connector
	3-wire PNP NO function	3-wire PNP NO function	3-wire PNP NO function	3-wire PNP NO function
	3-wire PNP programmable NO / NC	3-wire PNP programmable NO / NC	3-wire PNP programmable NO / NC	3-wire PNP programmable NO / NC
	3-wire NPN programmable NO / NC	3-wire NPN programmable NO / NC	3-wire NPN programmable NO / NC	3-wire NPN programmable NO / NC
	3-wire PNP / NPN programmable NO / NC	3-wire PNP / NPN programmable NO / NC	3-wire PNP / NPN programmable NO / NC	3-wire PNP / NPN programmable NO / NC
Supply voltage limits, min./max. (V) including ripple	10...30	10...30	10...30	10...30
Switching capacity, max. (mA) / Switching frequency (Hz)	100 / 500	100 / 1500	100 / 250	100 / 700
Overload and short-circuit protection (★) / LED output state indicator (☒)	★ / ☒	★ / ☒	★ / ☒	★ / ☒

(1) 0.007 m with XURZ02; 0.018 m with XURZ01.

(2) With 50 x 50 mm reflector; 0.6 m with 24 x 21 mm reflector.

(3) Also available in thru-beam system and NO version.

Accessories

Suitable female plug-in connectors, including pre-wired versions

length 5 m, w/o LED	Pre-wired, elbowed	Pre-wired, straight	Screw terminal
M8 (or S)	XZCP0666L5	XZCP0566L5	XZCC8FCM30S
M12 (or D) 4-pin	XZCP1241L5	XZCP1141L5	XZCC12FCM40B
M12 8-pin	-	XSZMCR03 (3m)	-
U20 (or K)	XZCP1965L5	XZCP1865L5	XZCC20FCM30B

Lenses for colour mark or luminescence detection

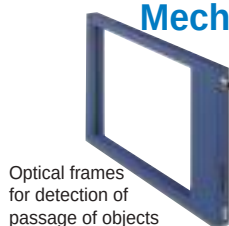
Lens for doubling sensing distance	Ring for fixed focusing distance
XURZ01	XURZ02



Colour sensors					
Diffuse (with teach mode)	Diffuse	Diffuse (with integral amplifier)	Thru-beam or Diffuse (4)	Thru-beam infrared	Thru-beam infrared
0.009 m (1)	0.02 m	0.040...0.060 m	0.005...0.25 m (4)	0.002 m	0.2 m (5)
direct: fixing ctrs. 28, M5 screws	direct: fixing centres 40 x 40	direct: fvg. ctrs. 68x42, M5 screws	on rail, fixing centres 16	direct: fixing centres 18	direct: fixing centres 20
with teach mode button	with teach mode button	with teach mode button	with teach mode button	with teach mode button	
M / ☉	P / ☉	M / ☉	M / ☉	M / ☉	P / ☉
- 10...+ 55 / IP 67	- 10...+ 55 / IP 65	- 10...+ 55 / IP 67	- 10...+ 55 / IP 65	0...+ 55 / IP 65	0...+ 40 / IP 65
96 x 31 x 64	50 x 25 x 50	80 x 30 x 57	82 x 25 x 44	97 x 20 x 26	47 x 13 x 33

M12 connector	M12 connector	Pre-cabled (2 m)	Pre-cabled (2 m)	M8 connector	Pre-cabled (2 m)
–	XUKC1PSMM12	XURC3PPML2	XURC4PPML2	–	–
–	XUKC1NSMM12	XURC3NPML2	XURC4NPML2	–	–
XURU1KSMM12	–	–	–	XUVK0252S	XUMW1KSNL2
10...30	10...30	10...30	10...30	10...30	10.8...26.4
200 / 2000	100 / 1500	100 / 1200	100 / 1200	100 / 10000	100 / 1000
★ / ☉	★ / ☉	★ / ☉	★ / ☉	★ / ☉	★ / ☉

Mechanical handling series



Optical frames
for detection of
passage of objects



Forked with integral
amplifier for indexing



Analogue output
Position control



High excess gain for resist-
ance to accumulated dirt

Food and beverage processing series



Stainless steel version for resistance to harsh agents



Thru-beam	Thru-beam	Diffuse	Thru-beam	Polarised reflex (7)	Diffuse (7)
200 x 120 mm passageway (6)	0.03 m	0.20...0.80 m	70 / 50 m	3 / 2 m	0.15 / 0.10 m
direct: 222.5, M5 screws	fixing centres 47	fvg. ctrs: 30 - 11P cable gland	M18 x 1	M18 x 1	M18 x 1
	–	–		–	–
M / ☉	P / –	P / ☉	M / ☉	M (stainless steel) / –	M (stainless steel) / –
0...+ 60 / IP 65	- 5...+ 55 / IP 54	- 25...+ 60 / IP 67	- 25...+ 55 / IP 67	- 25...+ 55 / IP 67	- 25...+ 55 / IP 67
205 x 25 x 230	–	86 x 27 x 83	M18 x 95	–	–

–	Pre-cabled, PvR (2 m)	ScREW terminals	–	Pre-cabled, PvR (2 m)	Pre-cabled, PvR (2 m)
–	XUVH0312	–	–	–	–
–	–	–	–	XU9N18PP341	XU5N18PP341
–	–	–	–	XU9N18NP341	XU5N18NP341
–	–	XUJK803538 (2)	–	–	–
M12 connector	–	–	M12 connector	M12 connector	M12 connector
–	–	–	–	–	–
–	–	–	XU2M18AP20D (8)	XU9N18PP341D	XU5N18PP341D
–	–	–	–	XU9N18NP341D	XU5N18NP341D
XUVF120M12	–	–	–	–	–
18...30	19...38	20...30	10...30	10...30	10...30
400 / 500	150 / 1000	max: 20, min: 4 / 10000	100 / 30	100 / 500	100 / 500
★ / ☉	★ / ☉	★ / ☉	★ / ☉	★ / ☉	★ / ☉

(4) Depending on fibres selected, see table below.

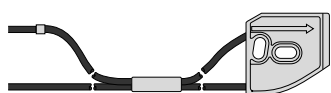
(5) Nominal sensing distance 50 m. Use between 10 and 20 cm depending on application.

(6) Different passageway sizes; 200 x 180: XUVF180M12, 200 x 250: XUVF250M12 and "U" form models available.

(7) Thru-beam system also available.

(8) With 4...20 mA analogue output.

Fibre optic light guides for use with full colour sensor XURC4...



Fibre type	System	Reference	Sensing dist.
Focused	Diffuse	XUFN5L01L2	10 mm
		XUFN5L02L2	20 mm
		XUFN5L03L2	30 mm

Fibre type	System	Reference	Sensing dist.
Standard	Diffuse	XUFN05321	5 mm
		Thru-beam	XUFN12301 + XUFZ01
		(colour detection by transparency)	250 m



Forks

Laser
class II

	Thru-beam	Thru-beam	Thru-beam laser
Max. / usable sensing distance	2...120 mm	2...120 mm	2...120 mm
Fixing (mm)	(see column E below)		
Sensitivity adjustment	potentiometer, 25 turn	teach button	
Case M (metal) P (plastic) / Setting-up assistance LEDs ☉	M / ☉		
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	- 25...+ 60 / IP 65		
Dimensions (mm) L x H	(see columns C and D below)		

Sensors for DC applications (solid-state output: transistor)

Connection	M8 connector (1)	M8 connector	M8 connector
Type of output	3-wire PNP/NPN programmable NO/NC		
Dimensions (mm) 3 choices of depth B (2)	A B C D E	A B C D E	A B C D E
Transmitter / Receiver 	XUYF953002COS	XUYFANEP40002	XUYFALNEP40002
	XUYF954002COS	XUYFANEP40005	XUYFALNEP40005
	XUYF954015COS	XUYFANEP40015	XUYFALNEP40015
	XUYF954030COS	XUYFANEP40030	XUYFALNEP40030
	XUYF954050COS	XUYFANEP40050	XUYFALNEP40050
	XUYF954080COS	XUYFANEP40080	XUYFALNEP40080
	XUYF954120COS	XUYFANEP40120	XUYFALNEP40120
	XUYF954150COS	XUYFANEP40150	XUYFALNEP40150
Supply voltage limits, min./max. (V) including ripple	10...30	10...30	10...30
Switching capacity, max. (mA) / Switching frequency (Hz)	100/500 Hz (10 kHz for XUYF953002COS)	100/10kHz	100/10kHz
Overload and short-circuit protection (★) / LED output state indicator (☉)	★ / ☉	★ / ☉	★ / ☉

(1) For pre-cabled (L = 2 m) version, delete CO from the reference. Ex: XUYF953002COS becomes XUYF953002S.

(2) For B = 59 mm, replace the first number 4 in the reference by 6.

For B = 95 mm, replace the first number 4 in the reference by 10.

Ex: for B = 59 mm: XUYFANEP40002 becomes XUYFANEP60002.



Sensors with plastic fibre optics



	Light sensor	Colour sensor, 1 or 4 colours	Colour mark reader
Max. / usable sensing distance	dpg. on fibre & end fitting	2...60 mm	18 mm
Fixing (mm)	DIN rail	51 x 115	DIN rail
Sensitivity adjustment	potentiometer, numerical +/-	teach button	teach button
Case M (metal) P (plastic) / Setting-up assistance LEDs ☉	P / ☉	P / ☉	P / ☉
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	0 ... + 60 / IP 65	0 ... + 40 / IP 65	0 ... + 40 / IP 65
Dimensions (mm) L x H	13 x 60	61 x 125	60 x 30

Sensors for DC applications (solid-state output: transistor)

Connection	M8 connector	2 x M12 connectors (included)	M8 connector
Type of output	PNP	NO function	—
	NPN	NO function	—
	PNP/NPN	Programmable NO/NC	XUYDCFCO966S
Supply voltage limits, min./max. (V) including ripple	10...30	22...26	10...30
Switching capacity, max. (mA) / Switching frequency (Hz)	100 / 5	100 / 500	100 / 20 k
Overload and short-circuit protection (★) / LED output state indicator (☉)	★ / ☉	★ / ☉	★ / ☉
Suitable plastic fibre optics, to be ordered separately	Usable Ø 1 mm	Sensing distance	
	L = 10 m XUFZ910	18 mm L = 0.6 m XUYFPCF61	L = 0.6 m XUYFPDC61
	L = 20 m XUFZ920	60 mm L = 0.6 m XUYFPCP61	L = 1 m XUYFPDC101
	L = 50 m XUYA00550	18 mm L = 1 m XUYFPCF101	L = 0.6 m / M8 XUYFPDCM861
		60 mm L = 1 m XUYFPCP101	L = 1 m / M8 XUYFPDCM8101



Amplifier for fibre optics

	Diffuse or Thru-beam depending on fibres		Multi channels
	for plastic fibres	for plastic or glass fibres	
Sensing distance	dpg. on fibres (80 mm for diffuse, 200 mm for thru-beam, up to 4 m using end fitting accessories)		
Fixing (mm)	DIN rail		
Sensitivity adjustment	potentiometer	numerical potentiometer + teach	LCD display
Case M (metal) P (plastic) / Setting-up assistance LEDs ☒	P / ☒	P / ☒	P / ☒ using selector/setting knob
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	0...+60	0...+60 / IP 65 and IP 67	0...+60 / IP 40
Dimensions (mm) L x H	30 x 80	30 x 80	45 x 100

Sensors for applications:

AC

AC / DC

DC

Connection	Screw terminals	Screw terminals	2 x M8 connectors	
Type of output	Output relay, 1 C/O	Output relay, 1 C/O	PNP (3) or analogue	Nmbr. Analogue
Dimensions (mm)	30 x 80	30 x 80	45 x 100	PNP 4-20 mA
Transmitter / Receiver	–	XUYAFV954R (glass fibre)	XUYAFCLARY4ANSP	4 1
			XUYAFCLARY3ANSP	3 1
			XUYAFCLARY2ANSP	2 1
			XUYAFCLARY4STSP	4 0
			XUYAFCLARY3STSP	3 0
			XUYAFCLARY2STSP	2 0
Supply voltage limits, min./max. (V) including ripple	115/230 V AC	20...250 V AC/DC	10...30	
Switching capacity, max. (mA) / Switching frequency (Hz)	3 A / 250 V / 25 Hz	3 A / 25 Hz	100 / 1.1 kHz	
Overload and short-circuit protection (★) / LED output state indicator (☒)	–	– / ☒	★ / ☒	

(3) For NPN version, replace the last letter of the reference (P) by N. Ex: XUYAFCLARY4ANSP becomes XUYAFCLARY4ANSN.



	B/ground suppression with 2 channels	Diffuse with sensing face on side	High performance colours reader	Dynamic detection sensor
Sensing distance	50...600 mm	adjustable...450 mm	3...70 mm dpg. on fibres*	3 m
Fixing (mm)	2 x Ø 3 holes / centres 54	DIN rail	DIN rail	2 x Ø 4 holes
Sensitivity adjustment	potentiometer	using +/- buttons	LCD display	using +/- teach buttons
Case M (metal) P (plastic) / Setting-up assistance LEDs ☒	P / ☒	P / ☒	P / ☒	P / ☒
Temperature range (°C) / Degree of protection (conforming to IEC 60529)	- 25...+ 60 / IP 67	0...+ 60 / IP 65	0...+ 60 / IP 40	0...+ 60 / IP 65
Dimensions (mm) L x H	18 x 60	78 x 30	45 x 100	30 x 80

Sensors for DC applications (solid-state output: transistor)

Connection	M8 connector		2 x M12 connectors	Screw terminals
Type of output	PNP/NPN	Programmable NO/NC		
	PNP (5 colours)	Programmable NO/NC	–	–
	NPN (26 colours)	Programmable NO/NC	XUYLCCLARYS5DSP	–
	NPN	Programmable NO/NC	XUYLCCLARYS26CSP	–
			–	XUY96001SA
Supply voltage limits, min./max. (V) including ripple	10...30	10...30	12...30	10...30
Switching capacity, max. (mA) / Switching frequency (Hz)	100 / 370	100 / 1000	100 / 1000	100 / 0.5
Overload and short-circuit protection (★) / LED output state indicator (☒)	★ / ☒	★ / ☒	★ / –	★ / –

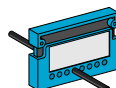
Accessories

Suitable female pre-wired plug-in connectors

	M8 straight	M12 straight
2 m	XZCP0941L2	XZCP1141L2
5 m	XZCP0941L5	XZCP1141L5

	M8 elbowed	M12 elbowed
	XZCP1041L2	XZCP1241L2
	XZCP1041L5	XZCP1241L5

For plastic fibre optics

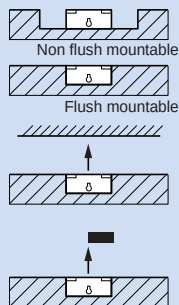
Fibre trimmer
(for trimming fibres to length)

XUFZ11

*Associated fibres

Special high performance colour

Sen. dist.	Spot	Length	Reference
25 m	Ø 2	600	XUYFLCHC2561
70 m	Ø 6	600	XUYFLCHC7061



Osiconcept®
Offering simplicity through innovation

A single product that automatically adapts to all installation environments.

Accurate position detection using teach mode



	M8	M12	M18	M30
Nominal sensing distance S_n	2.5 mm	4 mm	8 mm	15 mm
Usable sensing distance S (mm) flush mountable / non flush mountable	0...2	0...3.2	0...6.4	0...12
Fine adjustment zone (mm) flush mountable / non flush mountable	–	–	–	–
Suitability for flush mounting (metal environment)	flush mountable	flush mountable	flush mountable	flush mountable
Case M (metal) P (plastic)	M	M	M	M
Temperature range (°C)	- 25...+ 70	- 25...+ 70	- 25...+ 70	- 25...+ 70
Degree of protection (conforming to IEC 60529)	IP 67	pre-cabled: IP 68 (with connector: IP 67)		

Sensors for DC applications

Connection			Pre-cabled, PvR (2 m)			
Dimensions (mm) Ø x L or W x H x D			M8 x 50	M12 x 50	M18 x 60	M30 x 60
3-wire	PNP	NO function	XS608B1PAL2	XS612B1PAL2	XS618B1PAL2	XS630B1PAL2
		NC function	XS608B1PBL2	XS612B1PBL2	XS618B1PBL2	XS630B1PBL2
	NPN	NO function	XS608B1NAL2	XS612B1NAL2	XS618B1NAL2	XS630B1NAL2
		NC function	XS608B1NBL2	XS612B1NBL2	XS618B1NBL2	XS630B1NBL2
Connection			M8 connector		M12 connector	 Snap-C® compatible 
Dimensions (mm) Ø x L or W x H x D						
3-wire	PNP	NO function	XS608B1PAM12	XS612B1PAM12	XS618B1PAM12	XS630B1PAM12
		NC function	XS608B1PBM12	XS612B1PBM12	XS618B1PBM12	XS630B1PBM12
	NPN	NO function	XS608B1NAM12	XS612B1NAM12	XS618B1NAM12	XS630B1NAM12
		NC function	XS608B1NBM12	XS612B1NBM12	XS618B1NBM12	XS630B1NBM12
Supply voltage limits, min./max. (V) including ripple			10...58	10...58	10...58	10...58
Switching capacity, max. (mA)			200	200	200	200
Overload and short-circuit protection (★)			★	★	★	★
LED output state indicator (⊗) and power on LED (⊗)			⊗ / –	⊗ / –	⊗ / –	⊗ / –
Voltage drop, closed state (V) at I nominal			≤ 2	≤ 2	≤ 2	≤ 2
Switching frequency (Hz)			2500	2500	1000	500

Multi-current/multi-voltage sensors for AC/DC applications

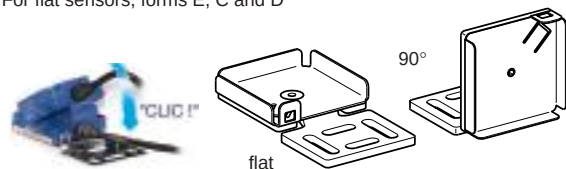
Connection			Pre-cabled, PvR (2 m)			
Dimensions (mm)			–	M12 x 50	M18 x 60	M30 x 60
2-wire	AC/DC	NO function	–	XS612B1MAL2	XS618B1MAL2	XS630B1MAL2
not short-circuit protected (1)		–	XS612B1MBL2	XS618B1MBL2	XS630B1MBL2	
Connection			1/2"-20 UNF connector			
Dimensions (mm) Ø x L or W x H x D						
2-wire	AC/DC	NO function	–	XS612B1MAU20	XS618B1MAU20	XS630B1MAU20
not short-circuit protected (1)		–	XS612B1MBU20	XS618B1MBU20	XS630B1MBU20	
Supply voltage limits, min./max. (V) including ripple			–	20...264	20...264	20...264
Switching capacity, max. (mA)			–	200	300 AC / 200 DC	300 AC / 200 DC
LED output state indicator (⊗) / power on LED (⊗)			–	–	⊗ / –	⊗ / – ⊗ / –
Residual current, open state (mA)			–	≤ 1.5	≤ 1.5	≤ 1.5
Voltage drop, closed state (V) at I nominal			–	≤ 5.5	≤ 5.5	≤ 5.5
Switching frequency (Hz)			–	25 AC / 1000 DC	25 AC / 1000 DC	25 AC / 500 DC

(1) For these sensors without short-circuit protection, it is essential to connect a 0.4 A quick-blow fuse in series with the load.

Accessories

Fixing

For flat sensors, forms E, C and D



	flat	90°	substitution of block type sensors XSE / XSC / XSD
Form E	XSZBE00	XSZBE90	XSZBE10
Form C	XSZBC00	XSZBC90	XSZBC10
Form D	–	–	XSZBD10

Fixing clamp with indexing pin for cylindrical sensors



M8	XSZB108
M12	XSZB112
M18	XSZB118
M30	XSZB130

Available 1st half 2006

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Osiconcept®

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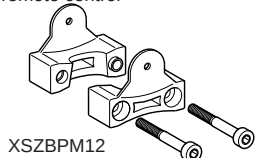
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Increased range M12	M18	M30	Form E 26 x 26	Form C 40 x 40	Form D 80 x 80
7 mm	12 mm	22 mm	15 mm	25 mm	60 mm
0 ... 5.6	0 ... 9.6	0 ... 17.6	0...8 / 0...12 5...10 / 5...15	0...12 / 0...20 8...15 / 8...25	0...32 / 0...48 20...40 / 20...60
non flush mountable			flush mountable or non flush mountable via Osiconcept teach mode		
M			P	P	P
- 25... + 70			- 25... + 70	- 25... + 70	- 25... + 70
pre-cabled: IP 68 (with connector: IP 67)			pre-cabled: IP 68 (with connector: IP 67)		

Pre-cabled (2 m)					
M12 x 1 x 55	M18 x 1 x 60	M30 x 1.5 x 62	26 x 26 x 13	40 x 40 x 15	80 x 80 x 26
XS612B4PAL2 ▲	XS618B4PAL2 ▲	XS630B4PAL2 ▲	XS8E1A1PAL2	XS8C1A1PAL2	XS8D1A1PAL2
XS612B4PBL2 ▲	XS618B4PBL2 ▲	XS630B4PBL2 ▲	XS8E1A1PBL2	XS8C1A1PBL2	XS8D1A1PBL2
XS612B4NAL2 ▲	XS618B4NAL2 ▲	XS630B4NAL2 ▲	XS8E1A1NAL2	XS8C1A1NAL2	XS8D1A1NAL2
XS612B4NBL2 ▲	XS618B4NBL2 ▲	XS630B4NBL2 ▲	XS8E1A1NBL2	XS8C1A1NBL2	XS8D1A1NBL2
M12 connector					
M12 x 1 x 65	M18 x 1 x 71	M30 x 1.5 x 74	26 x 26 x 13	40 x 40 x 15	80 x 80 x 26
XS612B4PAM12 ▲	XS618B4PAM12 ▲	XS630B4PAM12 ▲	XS8E1A1PAM8	XS8C1A1PAM8	XS8D1A1PAM12
XS612B4PBM12 ▲	XS618B4PBM12 ▲	XS630B4PBM12 ▲	XS8E1A1PBM8	XS8C1A1PBM8	XS8D1A1PBM12
XS612B4NAM12 ▲	XS618B4NAM12 ▲	XS630B4NAM12 ▲	XS8E1A1NAM8	XS8C1A1NAM8	XS8D1A1NAM12
XS612B4NBM12 ▲	XS618B4NBM12 ▲	XS630B4NBM12 ▲	XS8E1A1NBM8	XS8C1A1NBM8	XS8D1A1NBM12
10...58	10...58	10...58	10...36	10...36	10...36
200	200	200	100	200	200
★	★	★	★	★	★
⊗ / -	⊗ / -	⊗ / -	⊗ / ⊗	⊗ / ⊗	⊗ / ⊗
≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
2500	1000	500	2000	1000	150

Pre-cabled (2 m)					
-	M18 x 1 x 60	M30 x 1.5 x 62	26 x 26 x 13	40 x 40 x 15	80 x 80 x 26
-	XS618B4MAL2 ▲	XS630B4MAL2 ▲	XS8E1A1MAL2	XS8C1A1MAL2	XS8D1A1MAL2
-	XS618B4MBL2 ▲	XS630B4MBL2 ▲	XS8E1A1MBL2	XS8C1A1MBL2	XS8D1A1MBL2
1/2"-20 UNF connector					
-	M18 x 1 x 71	M30 x 1.5 x 74	26 x 26 x 13	40 x 40 x 15	80 x 80 x 26
-	XS618B4MAU20 ▲	XS630B4MAU20 ▲	XS8E1A1MAL01U20	XS8C1A1MAL01U20	XS8D1A1MAU20
-	XS618B4MBU20 ▲	XS630B4MBU20 ▲	XS8E1A1MBL01U20	XS8C1A1MBL01U20	XS8D1A1MBU20
-	20...264	20...264	20...264	20...264	20...264
-	300 AC / 200 DC	300 AC / 200 DC	200 AC or DC	300 AC / 200 DC	300 AC / 200 DC
-	⊗ / -	⊗ / -	⊗ / ⊗	⊗ / ⊗	⊗ / ⊗
-	≤ 0.8	≤ 0.8	≤ 1.5	≤ 1.5	≤ 1.5
-	≤ 5.5	≤ 5.5	≤ 5.5	≤ 5.5	≤ 5.5
-	25 AC / 1000 DC	25 AC / 300 DC	2000	1000	150

For Osiconcept XS6 remote control



XSZBPM12

Suitable female plug-in connectors, including pre-wired versions

length 5 m
without LED

M8

M12

U20

pre-wired,
elbowed

XZCP0666L5

XZCP1241L5

XZCP1965L5

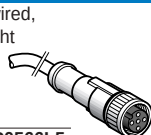


pre-wired,
straight

XZCP0566L5

XZCP1141L5

XZCP1865L5



screw terminal



XZCC8FCM30S

XZCC12FCM40B

XZCC20FCM30B

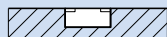
Snap-C



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XZCC12FDM40V

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Flush mountable

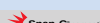


	Form J 8 x 22	Form F 15 x 32	Form E 26 x 26	Form C 40 x 40	Form D 80 x 80
Nominal sensing distance S_n	2.5 mm	5 mm	10 mm	15 mm	40 mm
Operating zone (mm)	0...2	0...4	0...8	0...12	0...32
Suitability for flush mounting (metal environment)	flush mountable	flush mountable	flush mountable	flush mountable	flush mountable
Case M (metal) P (plastic)	P	P	P	P	P
Temperature range (°C)	- 25...+ 70	- 25...+ 70	- 25...+ 70	- 25...+ 70	- 25...+ 70
Degree of protection (conforming to IEC 60529)	pre-cabled: IP 68 (with connector: IP 67)				

Sensors for DC applications

Connection			Pre-cabled, PvR (2 m)				
Dimensions (mm) Ø x L or W x H x D			8 x 22 x 8	15 x 32 x 8	26 x 26 x 13	40 x 40 x 15	80 x 80 x 26
3-wire	PNP	NO function	XS7J1A1PAL2	XS7F1A1PAL2	XS7E1A1PAL2	XS7C1A1PAL2	XS7D1A1PAL2
		NC function	XS7J1A1PBL2	XS7F1A1PBL2	XS7E1A1PBL2	XS7C1A1PBL2	XS7D1A1PBL2
	NPN	NO function	XS7J1A1NAL2	XS7F1A1NAL2	XS7E1A1NAL2	XS7C1A1NAL2	XS7D1A1NAL2
		NC function	XS7J1A1NBL2	XS7F1A1NBL2	XS7E1A1NBL2	XS7C1A1NBL2	XS7D1A1NBL2
Connection			M8 connector				M12 connector 
3-wire	PNP	NO function	XS7J1A1PAL01M8 (1)	XS7F1A1PAL01M8 (1)	XS7E1A1PAM8	XS7C1A1PAM8	XS7D1A1PAM12
		NC function	XS7J1A1PBL01M8 (1)	XS7F1A1PBL01M8 (1)	XS7E1A1PBM8	XS7C1A1PBM8	XS7D1A1PBM12
	NPN	NO function	XS7J1A1NAL01M8 (1)	XS7F1A1NAL01M8 (1)	XS7E1A1NAM8	XS7C1A1NAM8	XS7D1A1NAM12
		NC function	XS7J1A1NBL01M8 (1)	XS7F1A1NBL01M8 (1)	XS7E1A1NBM8	XS7C1A1NBM8	XS7D1A1NBM12
Supply voltage limits, min./max. (V) including ripple			10...36	10...36	10...36	10...36	10...36
Switching capacity, max. (mA)			100	100	100	100	100
Overload and short-circuit protection (★) / LED output state indicator (⊗)			★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗
Voltage drop, closed state (V) at I nominal			≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Switching frequency (Hz)			2000	2000	1000	1000	100

Sensors for DC applications

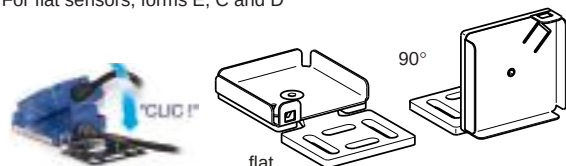
Connection			Pre-cabled, PvR (2 m)				
Dimensions (mm) Ø x L or W x H x D			8 x 22 x 8	15 x 32 x 8	26 x 26 x 13	40 x 40 x 15	80 x 80 x 26
2-wire	non polarised	NO function	XS7J1A1DAL2	XS7F1A1DAL2	XS7E1A1DAL2	XS7C1A1DAL2	XS7D1A1DAL2
		NC function	XS7J1A1DBL2	XS7F1A1DBL2	XS7E1A1DBL2	XS7C1A1DBL2	XS7D1A1DBL2
Connection			M8 connector				M12 connector 
2-wire	non polarised	NO function	XS7J1A1DAL01M8 (1)	XS7F1A1DAL01M8 (1)	XS7E1A1DAM8	XS7C1A1DAM8	XS7D1A1DAM12
		NC function	XS7J1A1DBL01M8 (1)	XS7F1A1DBL01M8 (1)	XS7E1A1DBM8	XS7C1A1DBM8	XS7D1A1DBM12
Supply voltage limits, min./max. (V) including ripple			10...36	10...36	10...36	10...36	10...36
Switching capacity, max. (mA)			100	100	100	100	100
Overload and short-circuit protection (★) / LED output state indicator (⊗)			★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗
Residual current, open state (mA)			≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5
Voltage drop, closed state (V) at I nominal			≤ 4	≤ 4	≤ 4	≤ 4	≤ 4
Switching frequency (Hz)			4000	5000	1000	1000	100

(1) M8 connector on flying lead (L = 0.15 m).

Accessories

Fixing

For flat sensors, forms E, C and D



	flat	90°	substitution of block type sensors XSE / XSC / XSD
Form E	XSZBE00	XSZBE90	XSZBE10
Form C	XSZBC00	XSZBC90	XSZBC10
Form D	—	—	XSZBD10

Fixing clamp with indexing pin
for cylindrical sensors



M8	XSZB108
M12	XSZB112
M18	XSZB118
M30	XSZB130



Increased range				Standard range			
M8	M12	M18	M30	M8	M12	M 18	M 30
2.5 mm	4 mm	10 mm	20 mm	1.5 mm	2 mm	5 mm	10 mm
0...2	0...3.2	0...8	0...16	0...1.2	0...1.6	0...4	0...8
flush mountable	non flush mountable	flush mountable	non flush mountable	flush mountable	flush mountable	flush mountable	flush mountable
M	M	M	M	M	M	M	M
- 25...+ 50	- 25...+ 50	- 25...+ 50	- 25...+ 50	- 25...+ 70	- 25...+ 70	- 25...+ 70	- 25...+ 70
IP 67	IP 68 (with connector: IP 67)			IP 67	pre-cabled: IP 68 (with connector: IP 67)		

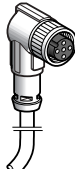
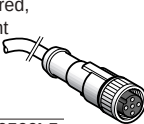
Short case

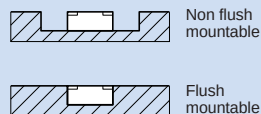
Pre-cabled, PvR (2 m)				Pre-cabled, PvR (2 m)			
M8 x 33	M12 x 33	M18 x 36.5	M30 x 40.6	M8 x 33	M12 x 33	M18 x 36.5	M30 x 40.6
XS1N08PA349	XS1N12PA349	XS1N18PA349	XS1N30PA349	XS508B1PAL2	XS512B1PAL2	XS518B1PAL2	XS530B1PAL2
XS1N08PB349	XS1N12PB349	XS1N18PB349	XS1N30PB349	XS508B1PBL2	XS512B1PBL2	XS518B1PBL2	XS530B1PBL2
XS1N08NA349	XS1N12NA349	XS1N18NA349	XS1N30NA349	XS508B1NAL2	XS512B1NAL2	XS518B1NAL2	XS530B1NAL2
XS1N08NB349	XS1N12NB349	XS1N18NB349	XS1N30NB349	XS508B1NBL2	XS512B1NBL2	XS518B1NBL2	XS530B1NBL2
M8 connector	M12 connector	Snap-C* compatible		M8 connector	M12 connector	Snap-C* compatible	
XS1N08PA349S	XS1N12PA349D	XS1N18PA349D	XS1N30PA349D	XS508B1PAM8	XS512B1PAM12	XS518B1PAM12	XS530B1PAM12
XS1N08PB349S	XS1N12PB349D	XS1N18PB349D	XS1N30PB349D	XS508B1PBM8	XS512B1PBM12	XS518B1PBM12	XS530B1PBM12
XS1N08NA349S	XS1N12NA349D	XS1N18NA349D	XS1N30NA349D	XS508B1NAM8	XS512B1NAM12	XS518B1NAM12	XS530B1NAM12
XS1N08NB349S	XS1N12NB349D	XS1N18NB349D	XS1N30NB349D	XS508B1NBM8	XS512B1NBM12	XS518B1NBM12	XS530B1NBM12
10...36	10...36	10...36	10...36	10...36	10...36	10...36	10...36
200	200	200	200	200	200	200	200
★ / –	★ / –	★ / –	★ / –	★ / ☉	★ / ☉	★ / ☉	★ / ☉
≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
2500	2500	1000	500	5000	5000	2000	1000

Long case

Pre-cabled, PvR (2 m)			
M8 x 50	M12 x 50	M18 x 52.5	M30 x 50
XS508B1DAL2	XS512B1DAL2	XS518B1DAL2	XS530B1DAL2
XS508B1DBL2	XS512B1DBL2	XS518B1DBL2	XS530B1DBL2
M12 connector	Snap-C* compatible		
XS508B1DAM12	XS512B1DAM12	XS518B1DAM12	XS530B1DAM12
XS508B1DBM12	XS512B1DBM12	XS518B1DBM12	XS530B1DBM12
10...58	10...58	10...58	10...58
100	100	100	100
★ / ☉	★ / ☉	★ / ☉	★ / ☉
≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5
≤ 4	≤ 4	≤ 4	≤ 4
4000	4000	3000	2000

Suitable female plug-in connectors, including pre-wired versions

length 5 m without LED	pre-wired, elbowed	pre-wired, straight	screw terminal	Snap-C
				
M8 (or S)	XZCP0666L5	XZCP0566L5	XZCC8FCM30S	–
M12 (or D)	XZCP1241L5	XZCP1141L5	XZCC12FCM40B	XZCC12FDM40V
U20 (or K)	XZCP1965L5	XZCP1865L5	XZCC20FCM30B	–



	M8	M12	M18	M30
Nominal sensing distance S_n	2.5 mm	4 mm	8 mm	15 mm
Operating zone (mm)	0...2	0...3.2	0...6.4	0...12
Suitability for flush mounting (metal environment)	non flush mountable			
Case M (metal) P (plastic)	P			
Temperature range (°C)	- 25...+ 70			
Degree of protection (conforming to IEC 60529)	IP 67		pre-cabled: IP 68 (with connector: IP 67)	

Sensors for DC applications

Connection				Pre-cabled, PvR (2 m)			
Dimensions (mm) Ø x L or W x H x D				M8 x 33	M12 x 33	M18 x 33.5	M30 x 40.5
2-wire (non polarised)		NO or NC	programmable	–	–	–	–
4-wire	PNP	NO + NC	complementary outputs	–	–	–	–
	NPN	NO + NC	complementary outputs	–	–	–	–
3-wire	PNP	NO function		XS4P08PA340	XS4P12PA340	XS4P18PA340	XS4P30PA340
		NC function		XS4P08PB340	XS4P12PB340	XS4P18PB340	XS4P30PB340
	NPN	NO function		XS4P08NA340	XS4P12NA340	XS4P18NA340	XS4P30NA340
		NC function		XS4P08NB340	XS4P12NB340	XS4P18NB340	XS4P30NB340
Connection				M8 connector	M12 connector		
3-wire	PNP	NO function		XS4P08PA340S	XS4P12PA340D	XS4P18PA340D	XS4P30PA340D
		NC function		XS4P08PB340S	XS4P12PB340D	XS4P18PB340D	XS4P30PB340D
	NPN	NO function		XS4P08NA340S	XS4P12NA340D	XS4P18NA340D	XS4P30NA340D
		NC function		XS4P08NB340S	XS4P12NB340D	XS4P18NB340D	XS4P30NB340D
Supply voltage limits, min./max. (V) including ripple				10...38	10...38	10...38	10...38
Switching capacity, max. (mA)				200	200	200	200
Short-circuit protect. (★) / LED output state indicator (⊗) / Power on LED (⊗)				★ / ⊗ / –	★ / ⊗ / –	★ / ⊗ / –	★ / ⊗ / –
Voltage drop, closed state (V) at I nominal				≤ 2	≤ 2	≤ 2	≤ 2
Switching frequency (Hz)				5000	5000	2000	1000

Multi-current/multi-voltage sensors for AC/DC applications

Connection			Pre-cabled, PvR (2 m)			
Dimensions (mm) Ø x L or W x D x H			M8 x 50	M12 x 50	M18 x 60	M30 x 60
2-wire	AC/DC	NO function	XS4P08MA230	XS4P12MA230	XS4P18MA230	XS4P30MA230
		NC function	XS4P08MB230	XS4P12MB230	XS4P18MB230	XS4P30MB230
	AC	NO or NC programmable	–	–	–	–
	AC/DC	NO or NC programmable	–	–	–	–
Connection			U20 connector			
2-wire	AC/DC	NO function	XS4P08MA230K	XS4P12MA230K	XS4P18MA230K	XS4P30MA230K
		NC function	XS4P08MB230K	XS4P12MB230K	XS4P18MB230K	XS4P30MB230K
not short-circuit protected (1)						
Supply voltage limits, min./max. (V) including ripple			20...264	20...264	20...264	20...264
Switching capacity, max. (mA)			100	200	300 AC / 200 DC	300 AC / 200 DC
LED output state indicator (⊗)			⊗	⊗	⊗	⊗
Residual current, open state (mA)			≤ 0.6	≤ 0.6	≤ 0.6	≤ 0.6
Voltage drop, closed state (V) at I nominal			≤ 5.5	≤ 5.5	≤ 5.5	≤ 5.5
Switching frequency (Hz)			25 AC / 3000 DC	25 AC / 3000 DC	25 AC / 2000 DC	25 AC / 1000 DC

(1) For these sensors without short-circuit protection, it is essential to connect a 0.4 A quick-blow fuse in series with the load.

Accessories

Fixing clamps

Fixing clamp with indexing pin
for cylindrical sensors



M4	XSZB104	M12	XSZB112
M5	XSZB105	M18	XSZB118
M6.5	XSZB165	M30	XSZB130
M8	XSZB108		

Miniature cylindrical (assembly)

Rectangular Form C

1



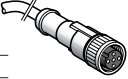
Ø 4	M5	Ø 6.5	Form C			
1 mm	1 mm	1.5 mm	15 mm	20 mm increased range	20 mm	40 mm increased range
0...0.8	0...0.8	0...1.2	0...12	0...16	0...16	0...32
flush mountable			flush mountable		non flush mountable	
M			P			
- 25...+ 70			- 25...+ 70			
IP 67			IP 67			

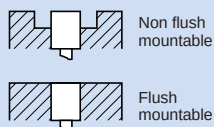
Pre-cabled, PvR (2 m)			Screw terminals (3)			
Ø 4 x 29	M5 x 29	M6.5 x 33	40 x 40 x 117			
—	—	—	XS7C40DP210	—	XS8C40DP210	—
—	—	—	XS7C40PC440	XS7C40PC449	XS8C40PC440	XS8C40PC449
—	—	—	XS7C40NC440	XS7C40NC449	XS8C40NC440	XS8C40NC449
XS1L04PA310	XS1N05PA310	XS1L06PA340	—	—	—	—
—	—	—	—	—	—	—
XS1L04NA310	XS1N05NA310	XS1L06NA340	—	—	—	—
—	—	—	—	—	—	—
M8 connector						
XS1L04PA310S	XS1N05PA311S (2)	XS1L06PA340S	—	—	—	—
—	—	—	—	—	—	—
XS1L04NA310S	XS1N05NA311S (2)	XS1L06NA340S	—	—	—	—
—	—	—	—	—	—	—
5...30	5...30	10...38	12...48			
100	100	200	4-wire version = 200 — 2-wire version = 1.5...100			
★ / ⊗ / —	★ / ⊗ / —	★ / ⊗ / —	4-wire version = ★ / ⊗ / ⊗ — 2-wire version = ★ / ⊗ / —			
≤ 2	≤ 2	≤ 2	4-wire version = ≤ 2 — 2-wire version = ≤ 4			
5000	5000	2500	2-wire = 1500 / 4-wire = 1000		2-wire = 800 / 4-wire = 1000 (20mm) 500 (40mm)	

			Screw terminals (3)			
—	—	—	40 x 40 x 117			
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	XS7C40FP260	—	XS8C40FP260	—
—	—	—	XS7C40MP230	—	XS8C40MP230	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	20...264			
—	—	—	AC version = 500 — AC/DC version = 300 / 200			
—	—	—	⊗			
—	—	—	AC version = ≤ 1.5 — AC/DC version = ≤ 0.8 / 1.5			
—	—	—	≤ 5.5			
—	—	—	25 AC / 50 DC			

(2) Stainless steel sensors, Sn = 0.8 mm.

(3) Sensors supplied without cable gland. Suitable cable gland: 13P.

Suitable female plug-in connectors, including pre-wired versions				
length 5 m without LED	pre-wired, elbowed		pre-wired, straight	
M8 (or S)	XZCP0666L5		XZCP0566L5	
M12 (or D)	XZCP1241L5		XZCP1141L5	
U20 (or K)	XZCP1965L5		XZCP1865L5	
			screw terminal	
			XZCC8FCM30S	
			XZCC12FCM40B	
			XZCC20FCM30B	



		M12	M18	M30
Sensing distance S_n	flush mountable	2 mm	5 mm	10 mm
	non flush mountable	4 mm	8 mm	15 mm
Operating zone (mm)	non flush mountable	0...1.6	0...4	0...8
	flush mountable	0...3.2	0...6.4	0...12
Suitability for flush mounting (metal environment)		flush mountable or non flush mountable depending on model		
Case M (metal) P (plastic)		M		
Temperature range (°C)		- 25...+ 70		
Degree of protection (conforming to IEC 60529)		IP 68 (with connector: IP 67)		
Dimensions (mm) Ø x L		M12 x 55	M18 x 60	M30 x 60

Sensors for DC applications

Connection						
4-wire	PNP	NO + NC	flush mountable	—	—	—
			non flush mountable	—	—	—
	NPN	NO + NC	flush mountable	—	—	—
			non flush mountable	—	—	—
	PNP+NPN	NO/NC programmable	flush mountable (metal)	—	—	—
			non flush mntbl. (metal)	—	—	—
			non flush mntbl. (plastic)	—	—	—
	Connection					
4-wire	PNP	NO + NC	flush mountable	—	—	—
			non flush mountable	—	—	—
	NPN	NO + NC	flush mountable	—	—	—
			non flush mountable	—	—	—
	PNP+NPN	NO/NC programmable	flush mountable (metal)	—	—	—
			non flush mntbl. (metal)	—	—	—
			non flush mntbl. (plastic)	—	—	—
	Supply voltage limits, min./max. (V) including ripple				—	—
Switching capacity, max. (mA)				—	—	—
Short-circuit protection (★) / LED output state indicator (⊗)				—	—	—
Voltage drop, closed state (V) at I nominal				—	—	—
Switching frequency (Hz)				—	—	—

Multi-current/multi-voltage sensors for AC/DC applications

Connection			Pre-cabled, PvR (2 m)		
2-wire AC/DC	NO function	flush mountable	XS1M12MA250	XS1M18MA250	XS1M30MA250
		non flush mountable	XS2M12MA250	XS2M18MA250	XS2M30MA250
	NC function	flush mountable	XS1M12MB250	XS1M18MB250	XS1M30MB250
		non flush mountable	XS2M12MB250	XS2M18MB250	XS2M30MB250
Connection			1/2"-20 UNF connector		
2-wire AC/DC	NO function	flush mountable	XS1M12MA250K	XS1M18MA250K	XS1M30MA250K
		non flush mountable	XS2M12MA250K	XS2M18MA250K	XS2M30MA250K
	NC function	flush mountable	XS1M12MB250K	XS1M18MB250K	XS1M30MB250K
		non flush mountable	XS2M12MB250K	XS2M18MB250K	XS2M30MB250K
Supply voltage limits, min./max. (V) 50-60 Hz			20...264		
Switching capacity, max. (mA)			5...200	5...200 AC, 5...300 DC	
LED output state indicator (⊗) / Power on LED (⊗)			⊗ / ⊗		
Residual current, open state (mA)			≤ 1.5		
Voltage drop, closed state (V) at I nominal			≤ 5.5		
Switching frequency (Hz)			25 AC, 4000 DC	25 AC, 2000 DC	25 AC, 2000 DC (1)

(1) 25 AC, 1000 DC for non flush mountable Ø 30 mm.

Complementary outputs NO + NC

PNP + NPN outputs, NO/NC programmable

1



M8	M12	M18	M30	M12	M18	M30
1.5 mm	2 mm	5 mm	10 mm	2 mm	5 mm	10 mm
2.5 mm	4 mm	8 mm	15 mm	4 mm	8 mm	15 mm
0...1.2	0...1.6	0...4	0...8	0...1.6	0...4	0...8
0...2	0...3.2	0...6.4	0...12	0...3.2	0...6.4	0...12
flush mountable or non flush mountable depending on model				flush mountable or non flush mountable depending on model		
M				M or P depending on model		
- 25...+ 70				- 25...+ 70		
IP 67		IP 68 (with connector: IP 67)		IP 68 (with connector: IP 67)		
M8 x 50	M12 x 33	M18 x 36.5	M30 x 40.5	M12 x 50	M18 x 60	M30 x 60

Pre-cabled, PvR (2 m)				Pre-cabled, PvR (2 m)		
XS1M08PC410	XS1N12PC410	XS1N18PC410	XS1N30PC410	–	–	–
XS2M08PC410	XS2N12PC410	XS2N18PC410	XS2N30PC410	–	–	–
XS1N08NC410	XS1N12NC410	XS1N18NC410	XS1N30NC410	–	–	–
XS2M08NC410	XS2N12NC410	XS2N18NC410	XS2N30NC410	–	–	–
–	–	–	–	XS1M12KP340	XS1M18KP340	XS1M30KP340
–	–	–	–	XS2M12KP340	XS2M18KP340	XS2M30KP340
–	–	–	–	XS4P12KP340	XS4P18KP340	XS4P30KP340
M12 connector				M12 connector		
XS1M08PC410D	XS1N12PC410D	XS1N18PC410D	XS1N30PC410D	–	–	–
XS2M08PC410D	XS2N12PC410D	XS2N18PC410D	XS2N30PC410D	–	–	–
XS1M08NC410D	XS1N12NC410D	XS1N18NC410D	XS1N30NC410D	–	–	–
XS2M08NC410D	XS2N12NC410D	XS2N18NC410D	XS2N30NC410D	–	–	–
–	–	–	–	XS1M12KP340D	XS1M18KP340D	XS1M30KP340D
–	–	–	–	XS2M12KP340D	XS2M18KP340D	XS2M30KP340D
–	–	–	–	XS4P12KP340D	XS4P18KP340D	XS4P30KP340D
10...36				10...36		
200				200		
★ / ☒				★ / –		
≤ 2				≤ 2.6		
5000	5000	2000	1000	5000	2000	1000

Accessories

Fixing clamps

With indexing pin for cylindrical sensors

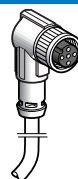


M12	XSZB112
M18	XSZB118
M30	XSZB130

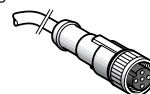
Suitable female plug-in connectors, including pre-wired versions

length 5 m
without LED

pre-wired,
elbowed



pre-wired,
straight



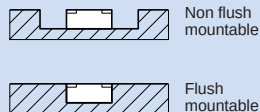
screw terminal



M8 (or S)	XZCP0666L5
M12 (or D)	XZCP1241L5
U20 (or K)	XZCP1965L5

XZCP0566L5
XZCP1141L5
XZCP1865L5

XZCC8FCM30S
XZCC12FCM40B
XZCC20FCM30B



	Form E 26 x 26	Form C 40 x 40	M30	M18	M30
Nominal sensing distance S_n	10 mm	15 mm	10 mm	5 mm	10 mm
Operating zone (mm)	0...8	0...12	0...8	0...4	0...8
Suitability for flush mounting (metal environment)	flush mountable			flush mountable	
Case M (metal) P (plastic)	P	P	M	M	M
Temperature range (°C)	- 25...+ 70			0...+ 50	
Degree of protection (conforming to IEC 60529)	IP 67			pre-cabled: IP 68 (with connector: IP 67)	
Dimensions (mm) Ø x L or W x H x D	26 x 26 x 13	40 x 40 x 15	M30 x 81	M18 x 70	M30 x 60
Maximum speed of passing object (impulses/min)	48000	48000	6000...48000 (1)	—	—
Adjustable frequency range (impulses/min)	6...6000	6...150 / 120...3000 (1)	—	—	—

Sensors for DC applications

Connection			Pre-cabled, PvR (2 m)					
4-wire	PNP/NPN NO/NC		programmable	—	—	—	XS1M18KPM40	XS1M30KPM40
3-wire	PNP	NC function	slow version	—	—	XSAV11373	—	—
			fast version	—	—	XSAV12373	—	—
	0...10 V output		plastic	—	—	—	—	
	4...20 mA output	metal, flush mountable	—	—	—	—	—	
		plastic, flush mountable	—	—	—	—	—	
plastic, non flush mountable		—	—	—	—	—		
Connection			M8 or M12 connector					Flying lead (L = 0.8 m) with M12
4-wire	PNP/NPN NO/NC		programmable	—	—	—	XS1M18KPM40D	XS1M30KPM40LD
3-wire	PNP	NC function		XS9E11RPBL01M12 (3)	XS9C11RPBL01M12 (3)	—	—	—
			0...10 V output	—	—	—	—	—
	4...20 mA output		—	—	—	—	—	
Supply voltage limits, min./max. (V) including ripple			10...36	10...36	10...58	10...38		
Switching capacity, max. (mA)			100	200	200	200		
Short-circuit protect. (★) / LED output state indicator (⊗) / Power on LED (⊗)			(⊗)	★ / ⊗ / ⊗	★ / ⊗ / ⊗	★ / ⊗ / —		★ / ⊗ / —
Linearity error			—	—	—	—		
Voltage drop, closed state (V) at I nominal			≤ 2	≤ 2	≤ 2	≤ 2.6		
Switching frequency (Hz)			—	—	—	1000		
Operating frequency (Hz)			—	—	—	—		

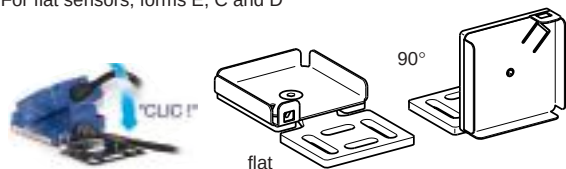
Multi-current/multi-voltage sensors for AC/DC applications

Connection				Pre-cabled, PvR (2 m)				
2-wire	AC/DC	NC function		XS9E11RMBL01U20 (5)	XS9C11RMBL01U20 (5)	—	—	—
not short-circuit protected (2)	NC function	slow version		—	—	XSAV11801	—	—
		fast version		—	—	XSAV12801	—	—
Supply voltage limits, min./max. (V) 50-60 Hz				20...264	20...264	20...264	—	—
Switching capacity, max. (mA)				100	300 AC / 200 DC	300 AC / 200 DC	—	—
LED output state indicator (⊗) / Power on LED (⊗)				⊗ / ⊗	⊗ / ⊗	⊗ / —	—	—
Residual current, open state (mA)				≤ 1.5	≤ 1.5	≤ 1.5	—	—
Voltage drop, closed state (V) at I nominal				≤ 5.5	≤ 5.5	≤ 5.7	—	—
Switching frequency (Hz)				—	—	—	—	—

Accessories

Fixing

For flat sensors, forms E, C and D



	flat	90°	substitution of block type sensors XSE / XSC / XSD
Form E	XSZBE00	XSZBE90	XSZBE10
Form C	XSZBC00	XSZBC90	XSZBC10
Form D	—	—	XSZBD10

Fixing clamp with indexing pin
for cylindrical sensors



M12	XSZB112
M18	XSZB118
M30	XSZB130

Analogue (Position control)

1



Form F 8 x 32	Form E 26 x 26	Form C 40 x 40	Form D 80 x 80	M12	M18	M30
5 mm	10 mm	15 mm	40 mm	M: 2 mm / P: 4 mm	M: 5 mm / P: 8 mm	M: 10 mm / P: 15 mm
1...4	1...10	2...15	5...40	M: 0.2...2 / P: 0.4...4	M: 0.5...5 / P: 0.8...8	M: 1...10 / P: 1.5...15
flush mountable	flush mountable	flush mountable	flush mountable	flush / non flush mountable	flush / non flush mountable	flush / non flush mountable
P	P	P	P	M or P	M or P	M or P
- 25...+ 70	- 25...+ 70	- 25...+ 70	- 25...+ 70	- 25...+ 70	- 25...+ 70	- 25...+ 70
pre-cabled: IP 68 (with connector: IP 67)				IP 67		
15 x 32 x 8	26 x 26 x 13	40 x 40 x 15	80 x 80 x 26	Ø 12 x 50	Ø 18 x 50	Ø 30 x 52.5
—	—	—	—	—	—	—
—	—	—	—	—	—	—

—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
XS9F111A1L2	XS9E111A1L2	XS9C111A1L2	XS9D111A1L2	XS4P12AB110	XS4P18AB110	XS4P30AB110
—	—	—	—	XS1M12AB120	XS1M18AB120	XS1M30AB120
XS9F111A2L2	XS9E111A2L2	XS9C111A2L2	XS9D111A2L2	—	—	—
—	—	—	—	XS4P12AB120	XS4P18AB120	XS4P30AB120
connector M8 or M12 connector						
—	—	—	—	—	—	—
—	—	—	—	—	—	—
XS9F111A1L01M8 (4)	XS9E111A1L01M12 (4)	XS9C111A1L01M12 (4)	XS9D111A1M12	—	—	—
XS9F111A2L01M8 (4)	XS9E111A2L01M12 (4)	XS9C111A2L01M12 (4)	XS9D111A2M12	—	—	—
10...36	10...36	10...36	10...36	10...38	10...38	10...38
—	—	—	—	—	—	—
—	—	—	—	—	—	—
± 1 V for 0...10 V version / ± 2 mA for 4...20 mA version						
—	—	—	—	—	—	—
—	—	—	—	—	—	—
2000	1000	1000	100	1500	500	300

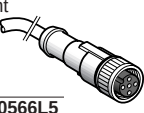
(1) 6...150 and 6000 impulses/min for XSAV11373 and XSAV11801 (slow version); 120...3000 and 48000 impulses/min for XSAV12373 and XSAV12801 (fast version).

(2) For these sensors without short-circuit protection, it is essential to connect a 0.4 A quick-blow fuse in series with the load.

(3) Flying lead (L = 0.15 m) with end mounted remote control incorporating M12 connector.

(4) Flying lead (L = 0.15 m) with end connector.

(5) Flying lead (L = 0.15 m) with end mounted remote control incorporating 1/2"-20 UNF connector.

Suitable female plug-in connectors, including pre-wired versions			
length 5 m without LED	pre-wired, elbowed	pre-wired, straight	screw terminal
			
M8	XZCP0666L5	XZCP0566L5	XZCC8FCM30S
M12 (or D)	XZCP1241L5	XZCP1141L5	XZCC12FCM40B
U20	XZCP1965L5	XZCP1865L5	XZCC20FCM30B

Available 1st half 2006



Type	M12	M18	Ø 18 plain	M30
Nominal sensing distance S_n	7 mm	12 mm	12 mm	22 mm
Operating zone (mm)	0 ... 5.6	0 ... 9.6	0 ... 9.6	0 ... 17.6
Suitability for flush mounting (metal environment)	non flush mountable			
Case M (metal) (1)	M stainless steel 316 L			
Temperature range (°C)	- 25...+ 85			
Degree of protection (conforming to IEC 60529)	pre-cabled: IP 68 (with connector: IP 67) and IP 69K conforming to DIN 40050			

Sensors for DC applications (solid-state output: transistor)

Connection			Pre-cabled, non poisonous PVC (2 m)			
Dimensions (mm)			M12 x 1 x 55	M18 x 1 x 60	Ø 18 x 60	M30 x 1.5 x 62
3-wire	PNP	NO function	XS212SAPAL2 ▲	XS218SAPAL2 ▲	XS2L2SAPAL2 ▲	XS230SAPAL2 ▲
	NPN	NO function	XS212SANAL2 ▲	XS218SANAL2 ▲	XS2L2SANAL2 ▲	XS230SANAL2 ▲
Connection			M12 connector			
Dimensions (mm)			M12 x 1 x 61	M18 x 1 x 70	Ø 18 x 70	M30 x 1.5 x 70
3-wire	PNP	NO function	XS212SAPAM12 ▲	XS218SAPAM12 ▲	XS2L2SAPAM12 ▲	XS230SAPAM12 ▲
	NPN	NO function	XS212SANAM12 ▲	XS218SANAM12 ▲	XS2L2SANAM12 ▲	XS230SANAM12 ▲
Supply voltage limits, min./max. (V) including ripple			10...36			
Switching capacity, max. (mA)			≤ 200			
Switching frequency (Hz)			2500	1000	1000	500
Short-circuit protection (★) / LED output state indicator (⊗)			★ / ⊗	★ / ⊗	★ / ⊗	★ / ⊗
Voltage drop, closed state (V) at I nominal			≤ 2			

Multi-current/multi-voltage sensors for AC/DC applications

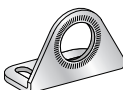
Connection			Pre-cabled, non poisonous PVC (2 m)			
Dimensions (mm)			—	M18 x 1 x 60	—	M30 x 1.5 x 62
2-wire (2)	AC/DC	NO function	—	XS218SAMAL2 ▲	—	XS230SAMAL2 ▲
Connection			1/2"-20 UNF connector			
Dimensions (mm)			—	M18 x 1 x 72	—	M30 x 1.5 x 74
2-wire (2)	AC/DC	NO function	—	XS218SAMAU20 ▲	—	XS230SAMAU20 ▲
Supply voltage limits, min./max. (V) 50-60 HZ			—	20 ... 264	—	20 ... 264
Switching capacity, max. (mA)			—	300 AC / 200 DC	—	300 AC / 200 DC
Switching frequency (Hz)			—	25 AC / 1000 DC	—	25 AC / 300 DC
LED output state indicator (⊗)			—	⊗	—	⊗
Voltage drop, closed state (V) at I nominal			—	≤ 5.5	—	≤ 5.5
Residual current, open state (mA)			—	≤ 0.8	—	≤ 0.8

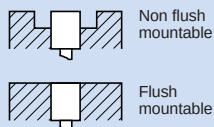


(1) Plastic range available. M12, M18, M30 :
To order, replace the letter S by A in the reference.
(example: XS212SAPAL2 becomes XS212AAPAL2).

(2) For these sensors without short-circuit protection,
it is essential to connect a 0.4 A quick-blow fuse in series with the load.

Accessories

Fixing clamps		M12 pre-wired connector		M12 jumper cable	
Plastic 	fixing centres 24.1 mm, with locking screw	female, 4-pin, stainless steel clamping ring		male, 3-pin, stainless steel clamping ring	
	for sensor	Straight connector		Straight connector	
	Ø 18 plain		5 m cable XZCPA1141L5		5 m XZCRA151140A5
Stainless steel 	for sensor	Elbowed connector			
	Ø 12		5 m cable XZCPA1241L5		
	Ø 18				
	Ø 30				



	Suitability for flush mtg. (metal environment)	M12	M18	M30	Ø 32	40 x 40
Nominal sensing distance S_n	flush mountable	2.5 mm	4 mm	10 mm	15 mm	15 mm
	non flush mountable	—	8 mm	15 mm	20 mm	—
Operating zone (mm)	flush mountable	0...1.44	0...3.6	0...7.2	0...10.8	0...10.8
	non flush mountable	—	0...5.8	0...10.8	0...14.4	—
Case M (metal) P (plastic)	flush mountable	M	M	M	M	P
	non flush mountable	—	P	P	P	—
Temperature range (°C)		- 25...+ 50				
Degree of protection (conforming to IEC 60529)		IP 67				
Dimensions (mm) Ø x L or H x W x D		M12 x 50	M18 x 60	M30 x 60	M32 x 80	40 x 40 x 117

Sensors for DC applications

Connection				Pre-cabled, PVC (2 m)					
3-wire	PNP	NO function	flush mountable	XT1M12PA372	XT1M18PA372	XT1M30PA372	–	–	
			non flush mountable	–	XT4P18PA372	XT4P30PA372	–	–	
		NC function	flush mountable	XT1M12PB372	XT1M18PB372	XT1M30PB372	–	–	
			non flush mountable	–	–	–	–	–	
	NPN	NO function	flush mountable	XT1M12NA372	XT1M18NA372	XT1M30NA372	–	–	
			non flush mountable	–	XT4P18NA372	XT4P30NA372	–	–	
Connection				Screw terminals					
3-wire	PNP	NO + NC functions	flush mountable	–	–	–	–	XT7C40PC440	
	NPN	NO + NC functions	flush mountable	–	–	–	–	XT7C40NC440	
Supply voltage limits, min./max. (V) including ripple				10...38					10...58
Switching capacity, max. (mA)				300					200
Short circuit-protection (★) / LED output state indicator (⊗)				★ / ⊗					★ / ⊗
Voltage drop, closed state (V) at I nominal				≤ 2					≤ 2
Switching frequency (Hz)				100					100

Multi-current / multi-voltage sensors for AC applications

Connection			Pre-cabled, PVC (2 m)				
2-wire AC not short-circuit protected (1)	NO function	flush mountable	–	XT1M18FA262	XT1M30FA262	XT1L32FA262	–
		non flush mountable	–	XT4P18FA262	XT4P30FA262	XT4L32FA262	–
	NC function	flush mountable	–	XT1M18FB262	XT1M30FB262	XT1L32FB262	–
		non flush mountable	–	–	XT4P30FB262	XT4L32FB262	–
Connection			Screw terminals				
2-wire AC	NO or NC programmable	flush mountable	–	–	–	–	XT7C40FP262
Supply voltage limits, min./max. (V) 50-60 Hz			–	20...264	20...264	90...250	20...264
Switching capacity, max. (mA)			–	300	300	250	350
LED output state indicator (⊗) / Power on LED (⊗)			⊗ / –				
Residual current, open state (mA)			–	≤ 1.5 / 120 V	≤ 1.5 / 120 V	≤ 7	≤ 1.5
Voltage drop, closed state (V) at I nominal			–	≤ 5.5	≤ 5.5	≤ 9	≤ 5.5
Switching frequency (Hz)			–	25	25	10	25

(1) For these sensors without short-circuit protection, it is essential to connect a 0.4 A quick-blow fuse in series with the load.

Accessories

Fixing clamps

Fixing clamp with indexing pin for cylindrical sensors



M8	XSZB108
M12	XSZB112
M18	XSZB118
Ø 32	XSZB32

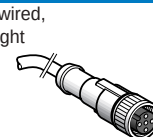
Suitable female plug-in connectors, including pre-wired versions

length 5 m without LED

pre-wired, elbowed



pre-wired, straight



screw terminal



M8	XZCP1041L5
M12	XZCP1241L5

XZCP0941L5
XZCP1141L5

XZCC8FCM40S
XZCC12FCM40B



	M12	M18	M30	M30 Long range
Nominal sensing distance S_n	5 or 10 cm depending on model	15 or 50 cm depending on model	1 m	8 m
Operating zone (cm)	0.64...5.1 (XX512A1...) 0.64...10.2 (XX512A2...)	1.9...15.2 (XX518A1...) 5.1...50.8 (XX518A3...)	51...99.1 –	203...800 –
Sensitivity adjustment	Fixed	Adjustable using remote control	Adjustable	Adjustable
Case P (plastic)	P	P	P	P
Temperature range (°C)	- 20...+ 65	0...+ 50 / - 20...+ 65	0...+ 60	- 20...+ 60
Degree of protection (conforming to IEC 60529)	IP 67		IP 65	
Dimensions (mm) Ø x L or W x H x D	M12 x 50	M18 x 65	M30 x 85	M30 x 106

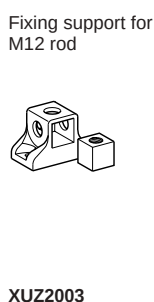
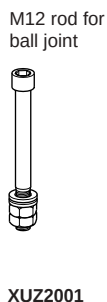
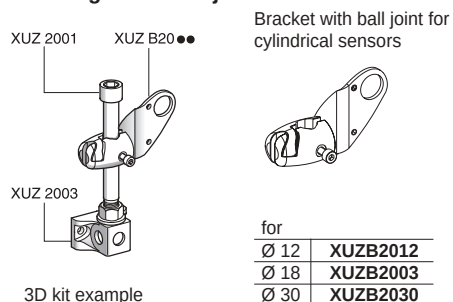
Sensors for DC applications (24 V)

Connection			M8 connector	M12 connector		
3-wire	PNP	NO function	XX512A2PAM8	XX518A3PAM12	–	–
	NPN	NO function	XX512A2NAM8	XX518A3NAM12	–	–
4-wire	PNP/NPN	NO function	XX512A1KAM8	XX518A1KAM12	XX630A1KAM12	–
	PNP	NO + NC function	–	–	XX630A1PCM12	XX630A3PCM12
	NPN	NO + NC function	–	–	XX630A1NCM12	XX630A3NCM12
	Analogue	0...10 V output 4...20 mA output	–	–	–	–
Supply voltage limits, min./max. (V) including ripple			10...28			
Switching capacity, max. (mA)			<100			
Short-circuit protection (★)			★	★		
LED output state indicator (⊗) / Power on LED (⊗)			⊗ / ⊗	⊗ / ⊗ except XX518A1.. (- / -)	⊗ / ⊗	
Voltage drop, closed state (V) at I nominal			<1			
Switching frequency (Hz)			125	40 / 80 (XX518A1..)	10	2
Transmission frequency (Hz)			500	300	200	75

Accessories

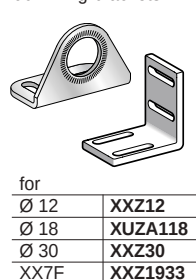
Fixing

3D fixings with ball joint

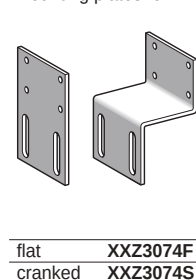


Simple fixings

90° fixing brackets



Mounting plates for XX7K



Application - analogue

1

						
Mini flat	Flat	Combined, multi-fixing	M30 stainless steel	M30	M30 stainless steel	M30 Long range
10 cm	25 cm	50 cm	1 m	1 m	1 m	8 m
0.62...10.2	5.1...25.4	5.1...50.8	5.1...99.1	5.1...99.1	5.1...99.1	203...800
–	–	–	–	–	–	–
Fixed	Fixed	Adjustable using remote control	Adjustable using remote control	Adjustable using teach mode	Adjustable using teach mode	Adjustable using teach mode
P	P	P	Stainless steel 303	P	Stainless steel 303	P
- 20...+ 65	0...+ 50	- 20...+ 65	0...+ 60	0...+ 60	0...+ 60	- 20...+ 60
IP 67			IP 65	IP 65		
33 x 19 x 7.6	74 x 30 x 16	60 x 33 x 18 / M 18 x 60	M30 x 85	M30 x 85	M30 x 85	M30 x 106

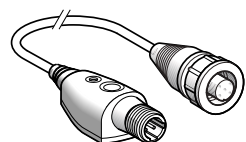
M12 on flying lead, L=0.15m	M12 connector			M12 connector		
XX7F1A2PAL01M12	XX7K1A2PAM12	XX7V1A1PAM12	–	–	–	–
XX7F1A2NAL01M12	XX7K1A2NAM12	XX7V1A1NAM12	–	–	–	–
–	–	–	–	–	–	–
–	–	–	XX630S1PCM12	–	–	–
–	–	–	XX630S1NCM12	–	–	–
–	–	–	–	XX930A1A1M12	XX930S1A1M12	XX930A3A1M12
–	–	–	–	XX930A1A2M12	XX930S1A2M12	XX930A3A2M12
10...28			10...28	10...28		
<100			<100	4...20 mA: resistive load, 10 to 500 Ω max. 0...10 V: resistive load, 1 kΩ to infinity		
★			★	★		
⊗ / ⊗			⊗ / ⊗	⊗ / ⊗		
<1			<1	–		
100	80	40	10	–		
500	500	300	200	200	200	75

Programming

Remote control

for teaching, usable with sensors

XX518A3●●● and XX7V1●●●



XXZPB100

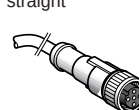
Suitable female plug-in connectors

Pre-wired connectors

elbowed



straight



Other connectors

screw terminal



Snap-C



L = 5 m (without LED)

M8	for XX512A1...	XZCP1041L5	XZCP0941L5	XZCC8FCM40V	XZCC8FDM40V
	for XX512A2...	XZCP0666L5	XZCP0566L5	XZCC8FCM30V	XZCC8FDM30V
M12	for XX7..., XX518... and XX630...	XZCP1241L5	XZCP1141L5	XZCC12FCM40B	XZCC12FDM40B



Diameter of housing (mm)	Ø 40	Ø 40	Ø 58	Ø 58	Ø 58 Parametrable	Ø 90
Shaft Ø (mm)	Ø 6	Ø 6	Ø 6	Ø 10	Ø 14 (1)	Ø 12
Type of shaft (2)	solid shaft	through shaft	solid shaft	solid shaft	through shaft	solid shaft
Maximum rotational speed (rpm)	9000	9000	9000	9000	6000	6000
Maximum frequency (kHz)	100	100	300	300	300	100
Maximum load (daN)	2	2	10	10	5	20
Torque (N.cm)	0.2	0.25	0.4	0.4	0.6	1
Temperature range (°C)	- 20...+ 80	- 20...+ 80	- 30...+ 100	- 30...+ 100	- 30...+ 70	- 20...+ 80
Degree of protection (conforming to IEC 60529)	IP 54	IP 52	IP 65 / IP 67 (3)	IP 65 / IP 67 (3)	IP 65	IP 66
Supply voltage	5 V, RS 422	4.5...5.5 V	4.5...5.5 V	4.75...30 V	4.75...30 V	4.5...5.5 V
Push-pull	11...30 V	11...30 V	5...30 V	5...30 V	5...30 V	11...30 V
Connection	Pre-cabled (2 m), radial		M23 male connector, radial			

Resolution (Points) Output stage

100	5 V, RS 422	XCC1406PR01R	XCC1406TR01R	XCC1506PS01X	XCC1510PS01X	–	XCC1912PS01RN
	Push-pull	XCC1406PR01K	XCC1406TR01K	XCC1506PS01Y	XCC1510PS01Y	–	XCC1912PS01KN
360	5 V, RS 422	XCC1406PR03R	XCC1406TR03R	XCC1506PS03X	XCC1510PS03X	–	XCC1912PS03RN
	Push-pull	XCC1406PR03K	XCC1406TR03K	XCC1506PS03Y	XCC1510PS03Y	–	XCC1912PS03KN
500	5 V, RS 422	XCC1406PR05R	XCC1406TR05R	XCC1506PS05X	XCC1510PS05X	–	XCC1912PS05RN
	Push-pull	XCC1406PR05K	XCC1406TR05K	XCC1506PS05Y	XCC1510PS05Y	–	XCC1912PS05KN
1000	5 V, RS 422	XCC1406PR10R	XCC1406TR10R	XCC1506PS10X	XCC1510PS10X	–	XCC1912PS10RN
	Push-pull	XCC1406PR10K	XCC1406TR10K	XCC1506PS10Y	XCC1510PS10Y	–	XCC1912PS10KN
1024	5 V, RS 422	XCC1406PR11R	XCC1406TR11R	XCC1506PS11X	XCC1510PS11X	–	XCC1912PS11RN
	Push-pull	XCC1406PR11K	XCC1406TR11K	XCC1506PS11Y	XCC1510PS11Y	–	XCC1912PS11KN
2500	5 V, RS 422	–	–	XCC1506PS25X	XCC1510PS25X	–	XCC1912PS25RN
	Push-pull	–	–	XCC1506PS25Y	XCC1510PS25Y	–	XCC1912PS25KN
3600	5 V, RS 422	–	–	–	–	–	XCC1912PS36RN
	Push-pull	–	–	–	–	–	XCC1912PS36KN
256...4096	5 V, RS 422	–	–	–	–	XCC1514TSM02X	–
	Push-pull	–	–	–	–	XCC1514TSM02Y	–
5000	5 V, RS 422	–	–	XCC1506PS50X	XCC1510PS50X	–	XCC1912PS50RN
	Push-pull	–	–	XCC1506PS50Y	XCC1510PS50Y	–	XCC1912PS50KN
360...5760	5 V, RS 422	–	–	–	–	XCC1514TSM03X	–
	Push-pull	–	–	–	–	XCC1514TSM03Y	–
500...8000	5 V, RS 422	–	–	–	–	XCC1514TSM05X	–
	Push-pull	–	–	–	–	XCC1514TSM05Y	–
10 000	5 V, RS 422	–	–	–	–	–	XCC1912PS00RN
	Push-pull	–	–	–	–	–	XCC1912PS00KN
1024...16 384	5 V, RS 422	–	–	–	–	XCC1514TSM11X	–
	Push-pull	–	–	–	–	XCC1514TSM11Y	–
5000...80 000	5 V, RS 422	–	–	–	–	XCC1514TSM50X	–
	Push-pull	–	–	–	–	XCC1514TSM50Y	–

Accessories

Shaft couplings

with spring



Bore diameter (encoder side)	Bore diameter (machine side)	Reference
6 mm	6 mm	XCCRAR0606
6 mm	8 mm	XCCRAR0608
6 mm	10 mm	XCCRAR0610
10 mm	10 mm	XCCRAR1010
10 mm	12 mm	XCCRAR1012

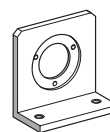
elastic



6 mm	6 mm	XCCRAE0606
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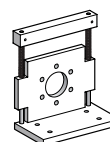
Fixing brackets

Plain bracket



for Ø 58 mm	XCCRE5SN
for Ø 90 mm	XCCRE9SN

Bracket with play compensator



for Ø 58 mm	XCCRE5RN
for Ø 90 mm	XCCRE9RN

Absolute - single turn

Absolute - multiturn

Communicating multiturn absolute

1



Diameter of housing (mm)	Ø 58	Ø 90	Ø 58	Ø 90	Ø 58 CANopen	Ø 58 PROFIBUS-DP
Shaft Ø (mm)	Ø 6	Ø 12	Ø 10	Ø 12	Ø 10	Ø 10
Type of shaft (2)	solid shaft	solid shaft	solid shaft	solid shaft	solid shaft (4)	solid shaft (4)
Maximum rotational speed (rpm)	9000	6000	6000	6000	6000	6000
Maximum frequency (kHz)	100	100 (1000 SSI)	100 (500 SSI)	100 (500 SSI)	800	800
Maximum load (daN)	10	20	10	20	11	11
Torque (N.cm)	0.4	1	0.4	1	0.3	0.3
Temperature range (°C)	- 20...+ 90	- 20...+ 85	- 20...+ 85	- 20...+ 85	- 40...+ 85	- 40...+ 85
Degree of protection (conforming to IEC 60529)	IP 65	IP 66	IP 65 / IP 67 (3)	IP 66	IP 64	IP 64
Supply voltage	11...30 V					
Connection	M23 male connector, radial				2 x M12 + 1 x PG9	3 x PG9
Resolution	Output stage	Code				
... 8192 points	Push-pull	Binary	XCC2506PS81KB	XCC2912PS81KBN	—	—
		Gray	XCC2506PS81KGN	XCC2912PS81KGN	—	—
	SSI, 13-bit	Binary	XCC2506PS81SBN	XCC2912PS81SBN	—	—
		Gray	XCC2506PS81SGN	XCC2912PS81SGN	—	—
4096 points / 8192 turns	SSI, 25-bit (5)	Gray	—	—	XCC3510PS48SGN	—
8192 points / 4096 turns	SSI, 25-bit (5)	Binary	—	—	XCC3510PS84SBN	XCC3912PS84SBN
		Gray	—	—	XCC3510PS84SGN	XCC3912PS84SGN
8192 points / 4096 turns	CANopen, 25-bit	Binary	—	—	—	XCC3510PS84CB
	PROFIBUS-DP, 25-bit	Binary	—	—	—	—
	25-bit	Binary	—	—	—	XCC3510PV84FB

(1) Anti-rotation device included with through shaft version encoders. To achieve Ø 6, 8, 10 or 12 mm through shafts, use the reduction collars.

(2) All versions are also available with through shaft and anti-rotation device.

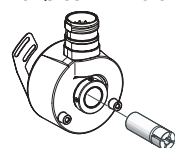
(3) IP 67 with sealed collar XCCRB3.

(4) Versions available with hollow shaft and anti-rotation device.

(5) "Parallel" outputs possible for multiturn absolute encoders using deserialisation jumper cables XCCRM23SUB37●●.

Reduction collars

For Ø 58 mm incremental encoders with through shaft



Ø 14 to Ø 6 mm	XCCR158RDA06
Ø 14 to Ø 8 mm	XCCR158RDA08
Ø 14 to Ø 10 mm	XCCR158RDA10
Ø 14 to Ø 12 mm	XCCR158RDA12

IP 67 sealed collar

For encoders XCC1510, 2510, 3510

Ø 58 mm	XCCRB3
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Pre-wired connectors and jumper cables

Pre-wired M23 female connectors (cable length 5 m)



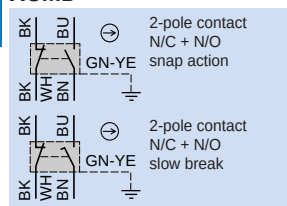
8-wire for SSI encoders	XCCPM23122L5
10-wire for incremental encoders	XCCPM23121L5
16-wire for parallel single turn absolute encoders	XCCPM23161L5

Deserialisation jumper cables (M23 F - SUB D37 M) (L = 5 m)

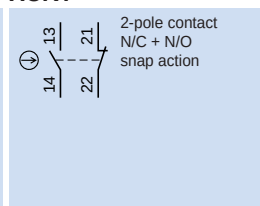


SSI Gray - // Gray PNP	XCCRM23SUB37PG
SSI binary - // binary NPN	XCCRM23SUB37PB

XCMD



XCKT



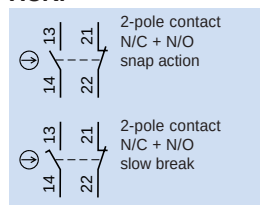
Miniature XCMD metal, pre-cabled; fixing by the body or by the head

Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever	Variable length thermoplastic roller lever	M12 head metal end plunger
Mechanical durability (millions of operating cycles)	10	10	10	10	10
Actuation speed (in m/s)	0.5	0.5	1.5	1.5	0.5
Switches conforming to standard IEC 947-5-1 section 3	⊕	⊕	⊕	⊕	⊕
Degree of protection conforming to IEC 60529	IP 66 and IP 67				
Rated operational characteristics	AC 15; B 300 (Ue = 240 V, Ie = 1.5 A) / DC 13; R 300 (Ue = 250 V, Ie = 0.1 A)				
Cable entry	Pre-cabled, adjustable direction, length = 1 m (other lengths available on request)				
Fixing centres (mm)	20				M12 x 1
Body dimensions (mm) W x D x H	30 x 16 x 50				
Complete switch (2-pole N/C + N/O snap action)	XCMD2110L1	XCMD2102L1	XCMD2115L1	XCMD2145L1	XCMD21F0L1
(2-pole N/C + N/O break before make, slow break)	XCMD2510L1	XCMD2502L1	XCMD2515L1	XCMD2545L1	XCMD25F0L1

⊕ Positive opening operation.



XCKP



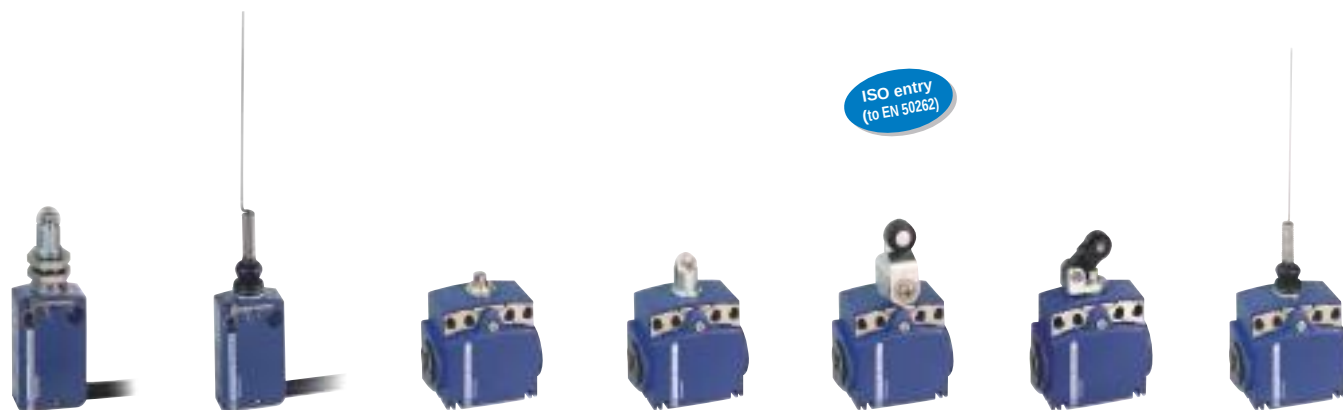
Compact XCKD metal and XCKP plastic conforming to standard EN 50047

Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	M18 head metal end plunger	M18 head steel roller plunger
Mechanical durability (millions of operating cycles)	15	10	15	10	10
Actuation speed (in m/s)	0.5	0.5	1	0.5	0.5
Switches conforming to standard IEC 947-5-1 section 3 					
Degree of protection conforming to IEC 60529	IP 66 and IP 67				
Rated operational characteristics	AC 15; A 300 (Ue = 240 V, Ie = 3 A) / DC 13; Q 300 (Ue = 250 V, Ie = 0.27 A)				
Cable entry	1 tapped entry for ISO M16 x 1.5 cable gland (2)				
Fixing centres (mm)	20	20	20	M18 x 1	M18 x 1
Body dimensions (mm) W x D x H	31 x 30 x 65				
Metal switches					
Complete switch (2-pole N/C + N/O snap action)	XCKD2110P16	XCKD2102P16	XCKD2121P16	XCKD21H0P16	XCKD21H2P16
(2-pole N/C + N/O break before make, slow break)	XCKD2510P16	XCKD2502P16	XCKD2521P16	XCKD25H0P16	XCKD25H2P16
Plastic, double insulated switches					
Complete switch (2-pole N/C + N/O snap action)	XCKP2110P16	XCKP2102P16	XCKP2121P16	XCKP21H0P16	XCKP21H2P16
(2-pole N/C + N/O break before make, slow break)	XCKP2510P16	XCKP2502P16	XCKP2521P16	XCKP25H0P16	XCKP25H2P16

(2) For Pg 11 cable entries, replace P16 by G11. Example: XCKD2110P16 becomes XCKD2110G11.

For other cable entries, see customised assembly on page 1/32.

⊕ Positive opening operation.



ISO entry
(to EN 50262)

Compact XCKT plastic, 2 cable entries						
M12 head steel roller plunger	"Cat's whisker"	Metal end plunger	Steel roller plunger	Thermoplastic roller lever	Thermoplastic roller lever plunger, horizontal actuation	"Cat's whisker"
10	5	15	10	10	15	5
0.1	1	0.5	0.5	1.5	1	1
⊖	—	⊖	⊖	⊖	⊖	—
IP 66 and IP 67						
AC 15; A 300 (Ue = 240 V, Ie = 3 A) / DC 13; Q 300 (Ue = 250 V, Ie = 0.27 A)						
2 tapped entries for ISO M16 x 1.5 cable gland (1)						
20						
20 or 40						
58 x 30 x 51						
XCMD21F2L1	XCMD2106L1	XCKT2110P16	XCKT2102P16	XCKT2118P16	XCKT2121P16	XCKT2106P16
XCMD25F2L1	XCMD2506L1	—	—	—	—	—

(1) For Pg 11 cable entries, replace P16 by G11. Example: XCKT2110P16 becomes XCKT2110G11.



ISO entry
(to EN 50262)

				Application - XCPR and XCDR with manual reset				
Thermoplastic roller lever	Variable length thermoplastic roller lever	Thermoplastic roller lever Ø 50 mm	"Cat's whisker"	Metal end plunger	Steel roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	Thermoplastic roller lever plunger, vertical actuation in 1 direction	Thermoplastic roller lever
10	10	10	5	1	1	1	1	1
1.5	1.5	1.5	1	0.5	0.5	1	1	1.5
⊖	⊖	⊖	—	⊖	⊖	⊖	⊖	⊖
IP 66 and IP 67								
AC 15; A 300 (Ue = 240 V, Ie = 3 A) / DC 13; Q 300 (Ue = 250 V, Ie = 0.27 A)								
1 tapped entry for ISO M20 x 1.5 cable gland (3)								
20	20	20	20	20	20	20	20	20
31 x 30 x 95								
XCKD2118P16	XCKD2145P16	XCKD2139P16	XCKD2106P16	XCDR2110P20	XCDR2102P20	XCDR2121P20	XCDR2127P20	XCDR2118P20
XCKD2518P16	XCKD2545P16	XCKD2539P16	XCKD2506P16	XCDR2510P20	XCDR2502P20	XCDR2521P20	XCDR2527P20	XCDR2518P20
XCKP2118P16	XCKP2145P16	XCKP2139P16	XCKP2106P16	XCPR2110P20	XCPR2102P20	XCPR2121P20	XCPR2127P20	XCPR2118P20
XCKP2518P16	XCKP2545P16	XCKP2539P16	XCKP2506P16	XCPR2510P20	XCPR2502P20	XCPR2521P20	XCPR2527P20	XCPR2518P20

(3) For Pg 13.5 cable entries, replace P20 by G13. Example: XCDR2110P20 becomes XCDR2110G13.

For other cable entries, see customised assembly on page 1/32.

Heads - common to miniature and compact bodies

Metal plunger and multi-directional heads

Description	Metal end plunger	Metal end plunger with protective elastomer boot	Steel roller plunger	Retractable steel roller lever plunger	Thermoplastic roller lever plunger, horizontal actuation
					
Reference	⇒ ZCE10	⇒ ZCE11	⇒ ZCE02	⇒ ZCE24 (2)	⇒ ZCE21

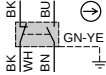
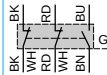
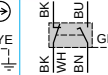
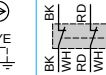
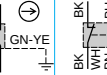
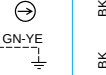
Metal rotary heads and levers

Description	Rotary head without lever, spring return, for actuation from LH or RH side	Thermoplastic roller lever, track: 24/31 mm (ZCMD) 29/36 mm (ZCD/P/T)	Steel roller lever, track: 24/31 mm (ZCMD) 29/36 mm (ZCD/P/T)	Thermoplastic roller lever, track: 16/39 mm (ZCMD) 21/44 mm (ZCD/P/T)	Steel roller lever, track: 16/39 mm (ZCMD) 21/44 mm (ZCD/P/T)
					
Reference	⇒ ZCE01	⇒ ZCY15 (2)	⇒ ZCY16 (2)	⇒ ZCY25 (2)	⇒ ZCY26 (2)

(1) Recommended for use with bodies: ZCD... / ZCP... / ZCT... (2) Recommended for use with bodies: ZCMD...

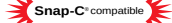
Bodies

Miniature

						
Type of contact	 2-pole N/C + N/O Snap action	 3-pole N/C+N/C+N/O Snap action	 2-pole N/C + N/O Slow break	 3-pole N/C+N/C+N/O Slow break	 2-pole N/C + N/O Snap action M12 5-pin connector	 1 C/O single-pole Snap action M12 4-pin connector
Reference of metal body	ZCMD21	ZCMD39	ZCMD25	ZCMD37	ZCMD21C12	ZCMD21M12
Reference of plastic body	—	—	—	—	—	—

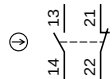
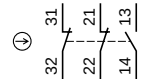
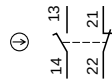
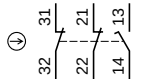
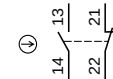
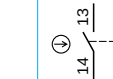
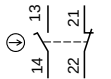
Connection of miniature bodies

Specific pre-cabled connection components					Option: pre-wired M12 connector, L = 2 m
L = 1 m	ZCMC21L1	ZCMC39L1	ZCMC25L1	ZCMC37L1	5-pin
L = 2 m	ZCMC21L2	ZCMC39L2	ZCMC25L2	ZCMC37L2	4-pin
L = 5 m	ZCMC21L5	ZCMC39L5	ZCMC25L5	ZCMC37L5	XZCP1164L2
					XZCP1169L2

⇒ Positive opening operation. (3)  Snap-C[®] compatible

Thermoplastic roller lever plunger, vertical actuation	M12 head metal end plunger	M18 head metal end plunger	M12 head steel roller plunger	M18 head steel roller plunger	Spring rod	Spring rod with plastic end	"Cat's whisker"
							
⊖ ZCE27	⊕ ZCEF0 (2)	⊖ ZCEH0 (1)	⊖ ZCEF2 (2)	⊕ ZCEH2 (1)	ZCE08	ZCE07	ZCE06
Thermoplastic roller lever, track: 20/36 mm (ZCMD) 24/40 mm (ZCD/P/T)	Steel roller lever, track: 20/36 mm (ZCMD) 24/40 mm (ZCD/P/T)	Ceramic roller lever	Variable length thermoplastic roller lever	Round, glass fibre rod lever Ø 3 mm L = 125 mm	Metal spring-rod lever	Thermoplastic roller lever Ø 50 mm	Adjustable thermo- plastic roller lever Ø 50 mm
							
⊖ ZCY18 (1)	⊕ ZCY19 (1)	⊖ ZCY22	⊖ ZCY45	ZCY55	ZCY91	⊖ ZCY39	⊕ ZCY49

Compact

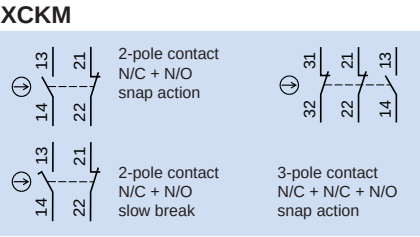
								
Type of contact								
Ref. metal body	ZCD21	ZCD39	ZCD25	ZCD37	ZCD21M12	—	—	—
Ref. plastic body	ZCP21	ZCP39	ZCP25	ZCP37	—	ZCP21M12	ZCT21P16	ZCT25P16

Connection of compact bodies

Interchangeable outlet for cable gland							Option: pre-wired M12 connector, L = 2 m		ZCT Pg 11 cable gland versions: replace the suffix P16 by G11. Example: ZCT21P16 becomes ZCT21G11 ZCT 1/2 NPT versions: replace the suffix P16 by N12 (adaptor). Example: ZCT21P16 becomes ZCT21N12
Description	For ISO M16 cable gland	For ISO M20 cable gland	For Pg 11 cable gland	For Pg 13.5 cable gland	For 1/2" NPT cable gland	For PF 1/2 (G12) cable gland			
Metal	ZCDEP16	ZCDEP20	ZCDEG11	ZCDEG13	ZCDEN12	ZCDEF12	XZCP1164L2	XZCP1169L2	
Plastic	ZCPEP16	ZCPEP20	ZCPEG11	ZCPEG13	ZCPEN12	ZCPEF12			

Limit switches
Classic - XCKM, complete switches

ISO entry
(to EN 50262)



Type XCKM metal, 3 cable entries

Type of operator	Metal end plunger	Steel roller plunger	Roller lever plunger, horizontal actuation in 1 direction	Thermoplastic roller lever	"Cat's whisker"
Mechanical durability (millions of operating cycles)	20	20	20	15	10
Actuation speed (in m/s)	0.5	0.5	1.5	1.5	0.5
Degree of protection conforming to IEC 60529	IP 665				
Rated operational characteristics	AC 15; A 300 (Ue = 240 V, Ie = 3 A) / DC 13; Q 300 (Ue = 250 V, Ie = 0.27 A)				
Cable entry (1)	3 tapped entries for ISO M20 x 1.5 cable gland (2 entries fitted with blanking plugs)				
Fixing centres (mm)	41				
Body dimensions (mm) W x D x H	63 x 30 x 64				

Complete switch (2-pole N/C + N/O snap action)	⊕ XCKM110H29	⊕ XCKM102H29	⊕ XCKM121H29	⊖ XCKM115H29	XCKM106H29
(2-pole N/C + N/O, break before make, slow break)	⊖ XCKM510H29	⊖ XCKM502H29	⊖ XCKM521H29	⊖ XCKM515H29	—

(1) For Pg 13.5 cable entry delete the reference suffix H29. Example: XCKM110H29 becomes XCKM110.

⊕ Positive opening operation.

Customised assembly of Classic XCKM switches
Body/contact sub-assemblies



Type XCKM metal, 3 cable entries

Type of contact

	2-pole N/C + N/O snap action	2-pole N/C + N/O slow break	3-pole N/C + N/C + N/O snap action	3-pole N/C + N/C + N/O slow break
Reference of body with contact block	⊕ ZCKM1H29	⊕ ZCKM5H29	⊕ ZCKMD39H29	⊖ ZCKMD37H29
Reference of contact block only	⊕ XE2SP2151	⊕ XE2NP2151	⊕ XE3SP2141	⊖ XE3NP2141



Customised assembly of Classic XCKM switches

Operating heads, complete or for customer assembly

1



Complete switch

=



Body/contact assembly

+



Head

+



Lever

Rotary or multi-directional heads

with thermoplastic
roller lever (2)

with steel roller
lever (2)

with variable length
thermoplastic
roller lever (2)

with Ø 6 mm
thermoplastic rod
L = 200 mm (3)

with thermoplastic
roller lever (3)
for actuation from
left **AND** right
or
left **OR** right

with "Cat's
whisker"

with spring rod



Reference

⊕ ZCKD15

⊕ ZCKD16

ZCKD41

ZCKD59

⊕ ZCKD31

ZCKD06

ZCKD08

Plunger heads

with metal
end plunger

with metal
end plunger
and protective
boot

with steel
roller plunger

with thermoplastic
roller lever plunger,
horizontal actuation
in 1 direction

with steel
roller lever plunger,
horizontal actuation
in 1 direction



Reference

⊕ ZCKD10

⊕ ZCKD109

⊕ ZCKD02

⊕ ZCKD21

⊕ ZCKD23

Rotary heads and separate levers

spring return,
for actuation from
left **AND** right
or
left **OR** right

lever with
thermoplastic
roller (2)

lever with
steel roller (2)

variable length
lever with
thermoplastic
roller (2)

variable length
lever with
steel roller (2)

rod, Ø 6 mm
thermoplastic
L = 200 mm (3)



Reference

⊕ ZCKD05

⊕ ZCKY31

⊕ ZCKY33

ZCKY41

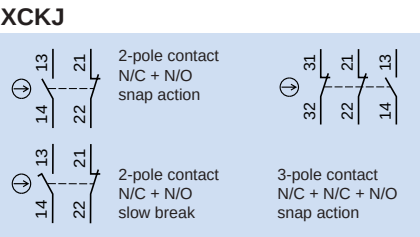
ZCKY43

ZCKY59

(2) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.

(3) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting.

Limit switches
Classic - XCKJ, complete switches



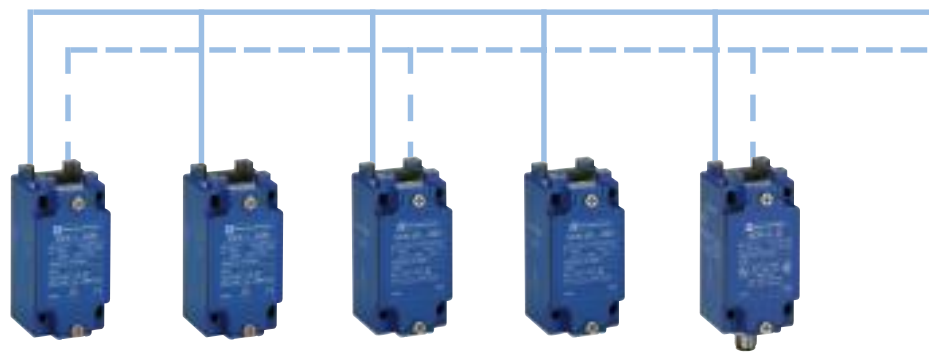
Type XCKJ metal, fixed body, conforming to standard EN 50041

Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever	Variable length thermoplastic roller lever	Polyamide Ø 6 mm rod lever L = 200 mm
Mechanical durability (millions of operating cycles)	30	25	30	30	30
Actuation speed (in m/s)	0.5	1	1.5	1.5	1.5
Degree of protection conforming to IEC 60529	IP 667				
Rated operational characteristics	AC 15; A 300 (Ue = 240 V, Ie = 3 A) / DC 13; Q 300 (Ue = 250 V, Ie = 0.27 A)				
Cable entry (1)	1 tapped entry for ISO M20 x 1.5 cable gland				
Fixing centres (mm)	30 x 60				
Body dimensions (mm) W x D x H	40 x 44 x 77				

Complete switch (2-pole N/C + N/O snap action)	⊕ XCKJ161H29	⊕ XCKJ167H29	⊕ XCKJ10511H29	⊕ XCKJ10541H29	⊕ XCKJ10559H29
(2-pole N/C + N/O break before make, slow break)	⊕ XCKJ561H29	⊕ XCKJ567H29	⊕ XCKJ50511H29	⊕ XCKJ50541H29	⊕ XCKJ50559H29

(1) For Pg 13.5 cable entry delete the reference suffix H29. Example: XCKJ161H29 becomes XCKJ161.
⊕ Positive opening operation.

Customised assembly of Classic XCKJ switches
Body/contact sub-assemblies



Type XCKJ metal, 3 cable entries

Type of contact					
Cable entry (1)	1 tapped entry for ISO M20 x 1.5 cable gland				M12 connector
Reference of body with contact block	⊕ ZCKJ1H29	⊕ ZCKJ5H29	⊕ ZCKJD39H29	⊕ ZCKJD37H29	⊕ ZCKJ1D
Reference of contact block only	⊕ XE2SP2151	⊕ XE2NP2151	⊕ XE3SP2141	⊕ XE3NP2141	⊕ XE2SP2151

Customised assembly of Classic XCKJ switches

Operating heads,
complete or for customer assembly

1



Complete switch

=



Body/contact assembly

+



Head

+



Lever

Plunger or multi-directional heads

with reinforced
steel roller
end plunger



Reference

⊕ ZCKE67

with metal
end plunger



⊕ ZCKE61

with thermoplastic
roller lever plunger,
1 direct. of actuation



⊕ ZCKE21

with steel
roller lever plunger,
1 direct. of actuation



⊕ ZCKE23

with steel roller
end plunger



⊕ ZCKE62

with steel
ball bearing
end plunger



⊕ ZCKE66

with metal
side plunger



Reference

⊕ ZCKE63

with steel roller
side plunger



⊕ ZCKE64

with spring rod



ZCKE08

with "Cat's whisker"



ZCKE06

Separate rotary heads and levers

spring return
for actuation from
left **AND** right
or
left **OR** right



Reference

⊕ ZCKE05

lever with
thermoplastic
roller (2)



⊕ ZCKY11

lever with
steel roller (2)



⊕ ZCKY13

variable length
lever with
thermoplastic
roller (2)



ZCKY41

variable length
lever with
steel roller (2)



ZCKY43

rod, Ø 6 mm
thermoplastic
L = 200 mm (2)



ZCKY59

spring-metal rod
lever (3)



ZCKY91

stay put
for actuation from
left **AND** right



Reference

ZCKE09

forked arm lever
with thermoplastic
rollers, 1 track (2)



ZCKY71

forked arm lever
with thermoplastic
rollers, 2 track (2)

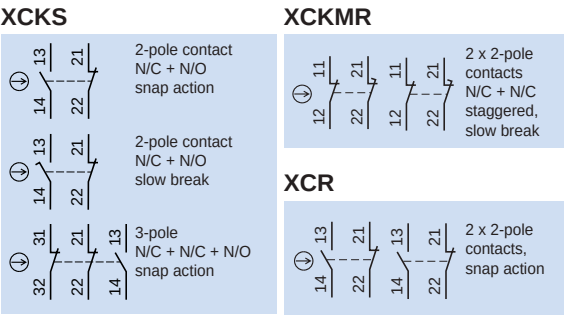


ZCKY61

(2) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting.

(3) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.

Limit switches
Classic - XCKS, complete switches



Type XCKS plastic, double insulated, conforming to standard EN 50041

Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever	Variable length thermoplastic roller lever	Rubber roller lever Ø 50 mm	Polyamide Ø 6 mm rod lever L = 200 mm
Mechanical durability (millions of operating cycles)	25	15	20	20	20	20
Actuation speed (in m/s)	0.5	0.5	1.5	1.5	1	1
Degree of protection conforming to IEC 60529	IP 653					
Rated operational characteristics	AC 15; A 300 (Ue = 240 V, Ie = 3 A) / DC 13; Q 300 (Ue = 250 V, Ie = 0.27 A)					
Cable entry (1)	1 tapped entry for ISO M20 x 1.5 cable gland					
Fixing centres (mm)	30 x 60					
Body dimensions (mm) W x D x H	40 x 36 x 72.5					

Complete switch (2-pole N/C + N/O snap action)	⊕ XCKS101H29	⊕ XCKS102H29	⊕ XCKS131H29	XCKS141H29	XCKS139H29	XCKS159H29
(2-pole N/C + N/O break before make, slow break)	⊕ XCKS501H29	⊕ XCKS502H29	⊕ XCKS531H29	XCKS541H29	XCKS539H29	XCKS559H29
Body (2-pole N/C + N/O snap action)	⊕ ZCKS1H29	⊕ ZCKS1H29	⊕ ZCKS1H29	⊕ ZCKS1H29	⊕ ZCKS1H29	⊕ ZCKS1H29
(2-pole N/C + N/O break before make, slow break)	⊕ ZCKS5H29	⊕ ZCKS5H29	⊕ ZCKS5H29	⊕ ZCKS5H29	⊕ ZCKS5H29	⊕ ZCKS5H29
(3-pole N/C + N/C + N/O snap action)	⊕ ZCKSD39H29	⊕ ZCKSD39H29	⊕ ZCKSD39H29	⊕ ZCKSD39H29	⊕ ZCKSD39H29	⊕ ZCKSD39H29
Associated head (including operator)	⊕ ZCKD01	⊕ ZCKD02	⊕ ZCKD31	ZCKD41	ZCKD39	ZCKD59
Operating lever for rotary head	–	–	⊕ ZCKY31	ZCKY41	ZCKY39	ZCKY59
Complete switch with 2-pole snap action contacts						
(2 x N/C + N/O contacts actuated in each direction)	–	–	–	–	–	–
(1 x N/C + N/O contact actuated in each direction)	–	–	–	–	–	–
Complete switch (2 x single-pole C/O snap action contacts)	–	–	–	–	–	–
(2 x 2-pole N/C+N/C staggered, slow break contacts)	–	–	–	–	–	–

⊕ Positive opening operation. (1) For Pg 13.5 cable entry delete the reference suffix H29. Example: XCKJ161H29 becomes XCKJ161.

XC2J switches, customised assembly
Body/contact sub-assemblies

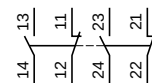


Type XC2J metal, fixed body, 1 cable entry incorporating cable gland

Type of contact



Single-pole
1 C/O contact
snap action



Double-pole
2 C/O simultaneous contacts
snap action

Reference of body with contact block	ZC2JC1	ZC2JC2
Reference of contact block only	XCKZ01	XESP1021

XCKMR and XCR, complete switches



Types XCKMR and XCR "Application - hoisting, materials handling, conveying"

Square rod levers Ø 6 mm, "crossed"	Square rod lever Ø 6 mm	Large roller rod lever Ø 50 mm	Square rod levers Ø 6 mm, "crossed" or "T"	Conveyor belt shift monitoring switches	
				Galvanised steel operating lever	Stainless steel operating lever
2	10	10	10	0.3	0.3
1.5	1.5	1.5	1.5	1.5	1.5
IP 545				IP 665	
AC 15; A 300 (Ue = 240 V, Ie = 3 A) / DC 13; Q 300 (Ue = 250 V, Ie = 0.27 A)					
3 x ISO M20 x 1.5 entries	1 tapped entry for n° 13 cable gland (for ISO M20 x 1.5, adaptor DE9RA1620 must be ordered separately)				
61.5	85 x 75				105 x 70
118 x 59 x 77	85 x 75 x 95				85 x 87 x 146

-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	⊖ XCRA11 (2)	⊖ XCRA15	⊖ XCRE18 (2)	-	-
-	⊖ XCRB11 (2)	-	⊖ XCRF17 (3)	-	-
-	-	-	-	XCRT115	XCRT315 (4)
XCKMR54D1H29 (2)	-	-	-	-	-

(2) Steel rods, L = 200 mm.

(3) Steel "T" rods, L = 200 mm, W = 300 mm.

(4) Polyester enclosure

Operating heads, complete or for customer assembly

Plunger heads

with metal end plunger

with steel roller end plunger

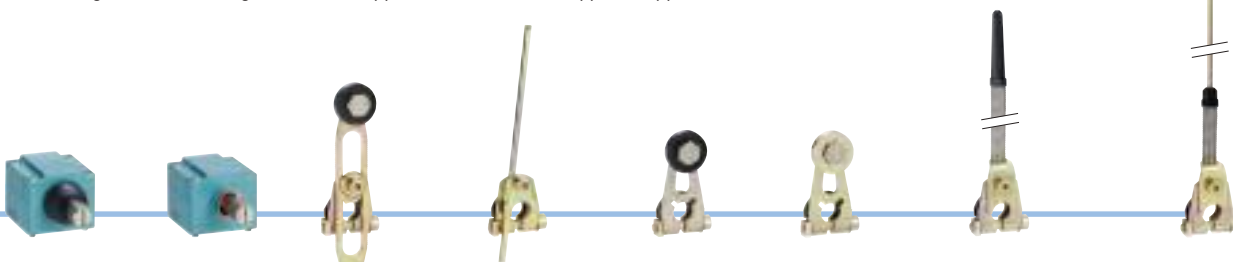


Reference	ZC2JE61	ZC2JE62
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Rotary heads and separate levers

spring return
for actuation from
left **AND** rightspring return
or actuation from
left **OR** rightvariable length lever
with thermoplastic
roller (1)rigid rod
Ø 3 mm, steel
L = 125 mm (1)lever with
thermoplastic roller
(1)lever with
steel roller (1)spring lever
(1)

spring-rod lever



Reference	ZC2JE01	ZC2JE05	ZC2JY31	ZC2JY51	ZC2JY11	ZC2JY13	ZC2JY81	ZC2JY91
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(1) Adjustable throughout 360°.



Pressure range (bar) (1)	-1...0	0...1	0...6	0...10	0...16	0...25	0...100	0...250	0...400
Fluids controlled	Hydraulic oils, air, fresh water, sea water, corrosive fluids from -15...+125°C								
Ambient air temperature	- 15...+ 85°C								
Degree of protection (conforming to IEC 60529)	IP 66 and IP 67								
Voltage limits	12...24 V DC, 8...33 V DC								
Dimensions (mm) Ø x L	Ø 22.8 x 70 (not including connector)								
Fluid connection (2)	1/4" BSP male								
Electrical connection (3)	M12 connector								
Type of output (4)	4...20 mA, 2-wire technique								
Analogue output 4...20 mA	XMLGM01D21	XMLG001D21	XMLG006D21	XMLG010D21	XMLG016D21	XMLG025D21	XMLG100D21	XMLG250D21	XMLG400D21

Available in bulk packs for selling in lots, please consult us.

The XMLG range also includes pressure switches, please consult us.

Electronic sensors XMLE

Electrical connection by DIN 43650 connector



Setting range (bar) (1)	-1...0	0...1	0...10	0...25	0...100	0...250	0...600
Fluids controlled	Hydraulic oils, air, fresh water, sea water, corrosive fluids from -15...+80°C						
Ambient air temperature	- 15...+ 80°C						
Degree of protection (conforming to IEC 60529)	IP 65						
Voltage limits	24 V DC, 11...33 V DC						
Dimensions (mm) Ø x L	Ø 40 x 90 (not including connector)						
Fluid connection (2)	1/4" BSP male						
Electrical connection (3)	DIN 43650 connector						
Type of output (4)	Transmitter Pressure switch						
Analogue output 4...20 mA	XMLEM01U1C21	XMLE001U1C21	XMLE010U1C21	XMLE025U1C21	XMLE100U1C21	XMLE250U1C21	XMLE600U1C21
NPN output	XMLEM01U1C31	XMLE001U1C31	XMLE010U1C31	XMLE025U1C31	XMLE100U1C31	XMLE250U1C31	XMLE600U1C31
PNP output	XMLEM01U1C41	XMLE001U1C41	XMLE010U1C14	XMLE025U1C41	XMLE100U1C41	XMLE250U1C41	XMLE600U1C41

(1) Other sizes, please consult us.

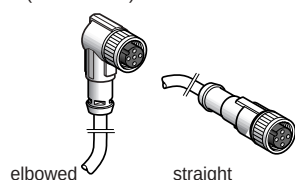
(2) Other fluid connections, please consult us.

(3) Other types of connection, please consult us.

(4) Other types of output; 0...5 V, 0...10 V, etc., please consult us.

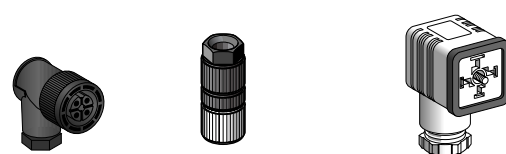
Suitable female plug-in connectors

Pre-wired connectors, L = 5 m (without LED)



M12	XZCP1241L5	XZCP1141L5
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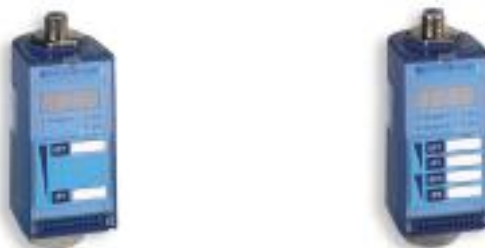
Other connectors



screw terminal	Snap-C	DIN 43650A
XZCC12FCM40B	XZCC12FDM40V	XZCC43FCP40B



Setting range of lower limit (PB): vacuum switches of upper limit (PH): pressure switches (bar)		-0.08...-1	0.08...1	0.2...2.5	0.8...10	3.2...40
Fluids controlled		Hydraulic oils, air, fresh water, sea water, corrosive fluids from -15...+80°C				
Ambient air temperature		- 25...+ 80°C				
Degree of protection (conforming to IEC 60529)		IP 67				
Voltage limits (V)		24 V DC (17...33 V DC)				
Dimensions (mm) H x W x D		113 x 46 x 58				
Fluid connection		1/4" BSP female (1)				
Electrical connection		M12 connector (2) 				
Configurable with digital display, connection by M12 connector (3)						
Universal sensors,	4...20 mA	XMLFM01D2025	XMLF001D2025	XMLF002D2025	XMLF010D2025	XMLF040D2025
solid-state output, 200 mA	0...10 V	XMLFM01D2125	XMLF001D2125	XMLF002D2125	XMLF010D2125	XMLF040D2125
Dual stage pressure switches, solid-state output, 200 mA		XMLFM01D2035	XMLF001D2035	XMLF002D2035	XMLF010D2035	XMLF040D2035
Analogue sensors	4...20 mA	XMLFM01D2015	XMLF001D2015	XMLF002D2015	XMLF010D2015	XMLF040D2015
	0...10 V	XMLFM01D2115	XMLF001D2115	XMLF002D2115	XMLF010D2115	XMLF040D2115
Possible differential (bar) (pressure switches)	Min. at low setting	0.03	0.03	0.08	0.3	1.2
	Min. at high setting	0.03	0.03	0.08	0.3	1.2
	Max. at high setting	0.95	0.95	2.38	9.5	38

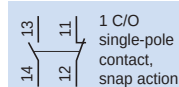


Setting range of upper limit (PH): pressure switches (bar)		8...100	12.8...160	20...250	32...400	48...600
Fluids controlled		Hydraulic oils, air, fresh water, sea water, corrosive fluids from -15...+80°C				
Ambient air temperature		- 25...+ 80°C				
Degree of protection (conforming to IEC 60529)		IP 67				
Voltage limits		24 V DC (17...33 V DC)				
Dimensions (mm) H x W x D		113 x 46 x 58				
Fluid connection		1/4" BSP female (1)				
Electrical connection		M12 connector (2) 				
Configurable with digital display, connection by M12 connector (3)						
Universal sensors,	4...20 mA	XMLF100D2025	XMLF160D2025	XMLF250D2025	XMLF400D2025	XMLF600D2025
solid-state output, 200 mA	0...10 V	XMLF100D2125	XMLF160D2125	XMLF250D2125	XMLF400D2125	XMLF600D2125
Dual stage pressure switches, solid-state output, 200 mA		XMLF100D2035	XMLF160D2035	XMLF250D2035	XMLF400D2035	XMLF600D2035
Analogue sensors	4...20 mA	XMLF100D2015	XMLF160D2015	XMLF250D2015	XMLF400D2015	XMLF600D2015
	0...10 V	XMLF100D2115	XMLF160D2115	XMLF250D2115	XMLF400D2115	XMLF600D2115
Possible differential (bar) (pressure switches)	Min. at low setting	3	4.8	7.5	12	18
	Min. at high setting	3	4.8	7.5	12	18
	Max. at high setting	95	152	237.5	380	570

(1) Available with other fluid connections: 1/4" NPT female and SAE 7/16-20 UNF.

(2) For M12 connection accessories, see page 3.

(3) AC 120 V version with 2.5 A relay output and SAE 7/8-16 UN connector also available.



Size (bar)	-1	5	1	2.5
Environmental characteristics	Ambient air temperature (°C): - 25...+ 70 Degree of protection (conforming to IEC 60529): IP 66			
Rated operational characteristics	AC-15; B300 (Ue = 240 V, Ie = 1.5 A - Ue = 120 V, Ie = 3 A) / DC-13; R300 (Ue = 250 V, Ie = 0.1 A)			
Fluid connection	1/4" BSP female (other connections possible, please consult us)			
Electrical connection	Screw terminals (1), tapped entry for ISO M20 x 1.5 cable gland - For n° 13 (DIN Pg 13.5) cable gland			
Fluids controlled	Hydraulic oils, fresh water, sea water, air up to 70°C		Hydraulic oils, air up to 0°C	Hydraulic oils, fresh water, sea water, air up to 70°C

Type XML-A fixed differential, single threshold detection

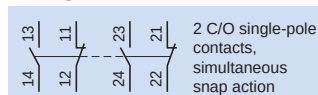
Setting range (bar) of upper limit (PH): pressure switches	- 0.28...- 1 (4)	-	0.03...1	0.15...2.5
Dimensions (mm) H x W x D	113 x 35 x 75	113 x 35 x 75	162 x 110 x 110	158 x 55 x 77.5
With setting scale 1 C/O single-pole, snap action contact	XMLAM01V2S12	-	XMLA001R2S12	XMLA002A2S12
Without setting scale 1 C/O single-pole, snap action contact	XMLAM01V1S12	-	XMLA001R1S12	XMLA002A1S12
Natural differential (bar) at low setting	0.24 (2)	-	0.02	0.13
subtract from PH to give PB at high setting	0.24 (2)	-	0.04	0.13

Type XML-B adjustable differential, regulation between 2 thresholds

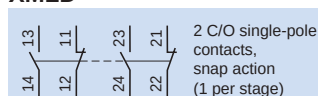
Setting range (bar) of upper limit (PH): pressure switches	- 0.14...- 1 (4)	- 0.5...5	0.05...1	0.3...2.5
With setting scale 1 C/O single-pole, snap action contact	XMLBM02V2S12	XMLBM05A2S12	XMLB001R2S12	XMLB002A2S12
Possible differential (bar) Min. at low setting	0.13 (3)	0.5	0.04	0.16
subtract from PH to give PB Min. at high setting	0.13 (3)	0.5	0.06	0.21
Max. at high setting	0.8 (3)	6	0.75	1.75

XMLC and D

XMLC



XMLD



Fluids controlled	Hydraulic oils, fresh water, sea water, air up to 70°C		Hydraulic oils, air up to 0°C	Hydraulic oils, fresh water, sea water, air up to 160°C
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Type XML-C adjustable differential, regulation between 2 thresholds

Setting range (bar) of upper limit (PH): pressure switches	- 0.14...- 1 (4)	- 0.55...5	0.05...1	0.3...2.5
Dimensions (mm) H x W x D	113 x 46 x 85	113 x 46 x 85	175 x 110 x 110	158 x 55 x 90
With setting scale 2 C/O single-pole, snap action contacts	XMLCM02V2S12	XMLCM05A2S12	XMLC001R2S12	XMLC002B2S12
Possible differential (bar) Min. at low setting	0.13 (4)	0.45	0.03	0.13
subtract from PH to give PB Min. at high setting	0.14 (4)	0.45	0.04	0.17
Max. at high setting	0.8 (4)	6	0.8	2

Type XML-D fixed differential, dual stage, for detection at each threshold

Setting range (bar)	2 nd stage switching point (PB2)	- 0.12...- 1 (4)	-	0.12...1	0.34...2.5
	1 st stage switching point (PB1)	- 0.10...- 0.98	-	0.04...0.92	0.2...2.36
	Spread between 2 stages (PB2 - PB1)	- 0.02...- 0.88	-	0.08...0.73	0.14...1.5
Without setting scale 2 C/O single-pole, snap action contacts (1 per stage)	XMLDM02V1S12	-	XMLD001R1S12	XMLD002B1S12	
Natural differential (bar) at low setting	0.1 (2)	-	0.03	0.14 m	
subtract from PH 1/2 to give PB 1/2 at high setting	0.1 (2)	-	0.07	0.19	



4	10	20	35	70	160	300	500
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conforming to IEC 947-5-1 Appendix A, EN 60 947-5-1

tapped entry, replace the last number of the reference (2) by 1 (example: XMLA010A2S12 becomes XMLA010A2S11)

Hydraulic oils, fresh water, sea water, air up to 70°C				Hydraulic oils up to 160°C			
0.4...4	0.6...10	0.7...20	1.5...35	5...70	10...160	20...300	30...500
113 x 35 x 75	113 x 35 x 75	113 x 35 x 75	113 x 35 x 75	113 x 35 x 75	113 x 35 x 75	113 x 35 x 75	113 x 35 x 75
XMLA004A2S12	XMLA010A2S12	XMLA020A2S12	XMLA035A2S12	XMLA070D2S12	XMLA160D2S12	XMLA300D2S12	XMLA500D2S12
XMLA004A1S12	XMLA010A1S12	XMLA020A1S12	XMLA035A1S12	XML-A070D1S12	XMLA160D1S12	XMLA300D1S12	XMLA500D1S12
0.35	0.5	0.4	1.25	3	5.5	16.5	20
0.35	0.5	1	1.25	7.5	18	35	45

0.25...4	0.7...10	1.3...20	3.5...35	7...70	10...160	22...300	30...500
XMLB004A2S12	XMLB010A2S12	XMLB020A2S12	XMLB035A2S12	XMLB070D2S12	XMLB160D2S12	XMLB300D2S12	XMLB500D2S12
0.02	0.57	1	1.7	4.7	9.3	19.4	23
0.25	0.85	1.6	2.55	8.8	20.8	37	52.6
2.4	7.5	11	20	50	100	200	300

- (1) For electrical connection by DIN 43650A connector (IP 65), replace the letter "S" in the reference by "C". Example: XMLB010A2S12 becomes XMLB010A2C12.
 (2) For vacuum switch: natural differential to be added to PB to give PH.
 (3) For vacuum switch: possible differential to be added to PB to give PH.
 (4) Setting range (bar) of lower limit (PB): vacuum switch.



Hydraulic oils, fresh water, sea water, air up to 160°C				Hydraulic oils up to 160°C			
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0.3...4	0.7...10	1.3...20	3.5...35	7...70	12...160	22...300	30...500
113 x 46 x 85	113 x 46 x 85	113 x 46 x 85	113 x 46 x 85	113 x 46 x 85	113 x 46 x 85	113 x 46 x 85	113 x 46 x 85
XMLC004B2S12	XMLC010B2S12	XMLC020B2S12	XMLC035B2S12	XMLC070D2S12	XMLC160D2S12	XMLC300D2S12	XMLC500D2S12
0.15	0.45	0.7	1	4.5	9	16	19
0.17	0.7	1	1.5	8.9	21	35	52
2.5	8	11	22	60	110	240	340

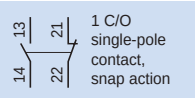
0.40...4	1.2...10	2.14...20	4.4...35	9.4...70	16.5...160	36...300	41...500
0.19...3.79	0.52...9.32	0.9...18.76	1.9...32.5	6.6...67.2	10.5...154	25...289	25...484
0.21...2.18	0.68...5.8	1.24...9.55	2.5...20.4	2.8...46	6...83	11...189	16...244
XMLD004B1S12	XMLD010B1S12	XMLD020B1S12	XMLD035B1S12	XMLD070D1S12	XMLD160D1S12	XMLD300D1S12	XMLD500D1S12
0.15	0.45	0.7	1.5	5	8.8	17	21
0.19	0.6	1.3	2.6	9.5	20	42	65

1

Nautilus

Sensors for pressure control

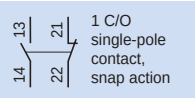
Electromechanical pressure switches XMX, XMA



Setting range of upper limit (PH) (bar)	1...6	1.3...12	3.5...25
Fluids controlled	Air, water (fresh water, sea water) from 0...+70°C		
Ambient air temperature	- 25...+ 70°C		
Degree of protection (conforming to IEC 60529)	IP 54		
Rated operational characteristics	AC-15; B300 (Ue = 240 V, Ie = 1.5 A - Ue = 120 V, Ie = 3 A) / DC-13; R300 (Ue = 250 V, Ie = 0.1 A)		
Dimensions (mm) H x W x D	106 x 57 x 98		126 x 57 x 98
Fluid connection	1/4" BSP female		
Electrical connection	Screw terminals, 2 tapped entries for n° 13 (DIN Pg 13.5) cable gland		

Type XMX-A with internal setting screw

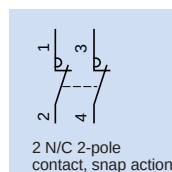
Without setting scale, screw terminal connections				
1 C/O single-pole, snap action contact		XMXA06L2135	XMXA12L2135	XMXA25L2135
Possible differential (bar)	Min. at low setting	0.8	1	3.4
subtract from PH to give PB	Min. at high setting	1.2	1.7	4.5
	Max. at high setting	4.2	8.4	20



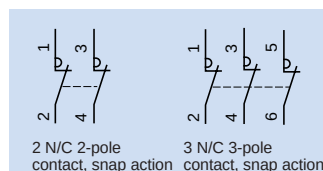
Setting range of upper limit (PH) (bar)	1...6	1.3...12	3.5...25
Fluids controlled	Air, water (fresh water, sea water) from 0...+70°C		
Ambient air temperature	- 25...+ 70°C		
Degree of protection (conforming to IEC 60529)	IP 54		
Rated operational characteristics	AC-15; B300 (Ue = 240 V, Ie = 1.5 A - Ue = 120 V, Ie = 3 A) / DC-13; R300 (Ue = 250 V, Ie = 0.1 A)		
Dimensions (mm) H x W x D	113 x 57 x 98		133 x 57 x 98
Fluid connection	1/4" BSP female		
Electrical connection	Screw terminals, tapped entry for n° 13 (DIN Pg 13.5) cable gland		

Type XMA with external setting screw (transparent cover)

Without setting scale, screw terminal connections				
1 C/O single-pole, snap action contact		XMAV06L2135	XMAV12L2135	XMAV25L2135
Possible differential (bar)	Min. at low setting	0.8	1	3.4
subtract from PH to give PB	Min. at high setting	1.2	1.7	4.5
	Max. at high setting	4.2	8.4	20



Degree of protection			IP 20			IP 65		
Size (bar)			4.6	7	10.5	4.6	7	10.5
Setting range of upper limit (PH) (bar)			1.4...4.6	2.8...7	5.6...10.5	1.4...4.6	2.8...7	5.6...10.5
Fluids controlled			Water (fresh water, sea water) from 0...+55°C					
Electrical connection			Screw terminals, 2 cable entries with grommet			Screw terminals, 2 tapped entries for n° 13 (DIN Pg 13.5) cable gland		
Ambient air temperature			For operation: 0...+ 50°C. For storage: - 30...+ 80°C					
Rated operational characteristics			Ie = 10 A, Ue = 250 V AC					
Power rating of controlled motors	110 V	AC 2-pole, single-phase	0.75 kW (1 HP)			0.75 kW (1 HP)		
		AC 2-pole, 3-phase	1.1 kW (1.5 HP)			1.1 kW (1.5 HP)		
	230 / 400 V	AC 2-pole, single-phase	1.5 kW (2 HP)			1.5 kW (2 HP)		
		AC 2-pole, 3-phase	2.2 kW (3 HP)			2.2 kW (3 HP)		
Dimensions (mm) H x W x D			96/105 x 72 x 102	94 x 72 x 102		115 x 72 x 106	115 x 72 x 106	
Fluid connection	G 1/4 (BSP female)		FSG2	FYG22	FYG32	FSG2NE	FYG22NE	FYG32NE
	R 1/4 (BSP male)		FSG9	FYG29	FYG39	–	–	–
	G 3/8 (BSP female) rotating nut		–	–	–	FSG2NEG	–	–
Possible differential (bar)		At low setting	1 min. - 2.1 max.	1.2 min. - 2.3 max.	1.9 min. - 3 max.	1 min. - 2.1 max.	1.2 min. - 2.3 max.	1.9 min. - 3 max.
subtract from PH to give PB		At middle setting	1.1 min. - 2.2 max.	1.4 min. - 2.5 max.	2.1 min. - 3.2 max.	1.1 min. - 2.2 max.	1.4 min. - 2.5 max.	2.1 min. - 3.2 max.
		At high setting	1.2 min. - 2.3 max.	1.6 min. - 2.7 max.	2.3 min. - 3.4 max.	1.2 min. - 2.3 max.	1.6 min. - 2.7 max.	2.3 min. - 3.4 max.



Size (bar)			6		12		25
Setting range of upper limit (PH) (bar)			1...6		1.3...12		3.5...25
Fluids controlled			Air, water (fresh water, sea water) from 0...+70°C				
Ambient air temperature			For operation: - 25...+ 70°C. For storage: - 40...+ 70°C				
Decompression valve / On/Off knob			without	with	without	with	without
Fluid connection			G 1/4 (BSP female)	4xG 1/4 (BSP female)	G 1/4 (BSP female)	4xG 1/4 (BSP female)	G 1/4 (BSP female)
Electrical connection			Screw terminals, 2 tapped entries for n° 13 (DIN Pg 13.5) cable gland				
Degree of protection			IP 54		IP 54		IP 54
Rated insulation voltage			Ui = 500 V				
Electrical durability	Power	1.5 kW	400 V AC 3-phase: 1 000 000 operating cycles				
			230 V AC 3-phase: 600 000 operating cycles				
		2.2 kW	400 V AC 3-phase: 700 000 operating cycles				
		3 kW	400 V AC 3-phase: 500 000 operating cycles				
Dimensions (mm) H x W x D			106 x 57 x 97.5	138 x 57 x 97.5	106 x 57 x 97.5	138 x 57 x 97.5	126 x 57 x 97.5
Type of contacts	2 N/C 2-pole, snap action contact		XMPA06B2131	XMPE06B2431	XMPA12B2131	XMPE12B2431	XMPA25B2131
	3 N/C 3-pole, snap action contact		XMPA06C2131	XMPE06C2431	XMPA12B2131	XMPE12C2431	XMPA25B2131
Possible differential (bar)		Min. at low setting	0.8	0.8	1	1	3.4
subtract from PH to give PB		Min. at high setting	1.2	1.2	1.7	1.7	4.5
		Max. at high setting	4.2	4.2	8.4	8.4	20

Composition of a vision system: Controller + Camera + Lens + Keypad + Monitor + Lighting + Accessories

The monitoring parameters in association with position, rotation and exposure adjustment functions enable verification of:

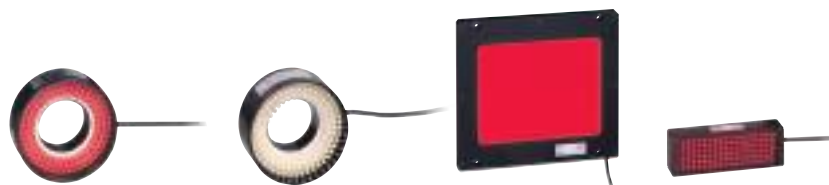
- Dimensions
- Position
- Presence/absence
- Quality and conformity of markings



Vision controllers		with 32-bit RISC processor CPU, 24 V DC		
Number of camera channels		1 camera	2 cameras	2 cameras
Number of programmes		32	64	32
Image analysis algorithms		Line, binary window, grey-scale window, binary edge, grey-scale edge, feature extraction, smart matching		OCR/OCV
Dimensions (mm) W x D x H		40 x 129.3 x 84		
Software language	English/French	XUVM110FR	XUVM210FR	XUVM230FR
	English/German	XUVM110GE	XUVM210GE	—
	English/Spanish	XUVM110SP	XUVM210SP	—
	English/Italian	XUVM110IT	XUVM210IT	—



	Camera	Lenses				Monitor	Keypad
	C mount	C mount with knurled locking wheel					
Description	"Full-frame"	50 mm	25 mm	16 mm	8.5 mm	15" TFT	8-button console
Characteristics	659x494 pixels	f: 2.8	f: 1.4	f: 1.4	f: 1.5	VGA video	2 m flying lead
Dimensions (mm) Ø x L or W x D x H	31x54.5x29	Ø 29.5x34	Ø 29.5x32	Ø 29.5x33.2	Ø 43.5x40	365x210x380	54.5x46x124.6
Reference	XUVC002	XUVCLF50D27	XUVCLF25D27	XUVCLF16D27	XUVCLF8D40	XUVDPTFT15	XUVK001



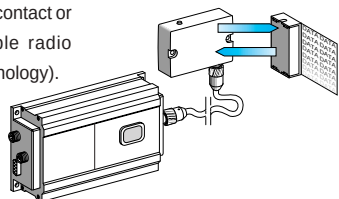
Lighting	Shower system		Back light system	Bar system
Colour of LEDs	red	white	red	red
Power, W	6	8.2	4.2	4.8
Supply voltage, V DC	12	24	12	12
Dimensions (mm) Ø x L or W x D x H	Ø 70 x 27	Ø 70 x 27	132 x 8 x 120	86 x 18 x 28.8
Reference	XUVDLR270RDWD	XUVDLR270SW	XUVFL100	XUVDL130X15



Accessories

	Power supplies		Connection cables				Backup
Description	24 V DC	12 V DC	Camera	Monitor	RS 232	Pre-wired connectors	Utility
	for vision controller or lighting system	for lighting system	to controller	to controller	Tool port to PC	for 24 V DC lighting system, cable length 5 m	for backing-up data, Windows 95/98/NT/2000/XP compatible
Reference	XUVC002	XUVCLF50D27	XUVCLF25D27	XUVCLF16D27	XUVCLF8D40	XUVLCB5	XUVBT001EN

The data is stored in an accessible memory, without physical contact or visual sighting, by simple radio frequency link (RFID technology).



Applications		Logistic: traceability, storage and other applications not requiring a large memory				Automated production: assembly, automation of flexible manufacturing workshops and all applications requiring a large memory with fast access	
Tags		Fixed code	Read/write code			Read/write code	
Type of memory		ROM	EEPROM			Ferro-electric	
Memory capacity		3 fixed words (6 bytes)	4 fixed words (8 bytes) + 58 modifiable words (116 bytes)			4 K words (8 Kb)	16 K words (32 Kb)
Nominal sensing distance (mm)		40	40	40	70	50	50
Time	Read (ms)	45 for all 6 bytes	50 (normal) + (26 x number of 4 byte blocks)			25 + 5 per byte	0.5 + 0.5 per byte
	Write (ms)	–	76 + (124 x number of 4 byte blocks)			25 + 5 per byte	0.5 + 0.5 per byte
Dimensions (mm) Ø x depth or W x H x D		Ø 30 x 4	Ø 30 x 1	22 x 45 x 12	54 x 85.5 x 1	40 x 60 x 17	50 x 75 x 15
Degree of protection		IP 68	IP 67	IP 67	IP 67	IP 65	IP 67
Housing material		Polyester	Epoxy	Rilsan	PVC	PPS	Rilsan
Fixing method		Central screw	Glued	Clip-on	–	Screws, 50 mm centres	Screws, 65 mm centres
Reference (1)		XGLB34F213	XGLB31E213	XGLB45E215	XGLB90E210	XGPB464220	XGPB576230



Inductive heads	Logistic		Automated production	
Nominal sensing distance (mm)	40	40 or 70 dpg. on tag	50	50
Dimensions (mm) Ø x L or W x H x D	Ø 30 x 73	100 x 65 x 29	100 x 65 x 29	100 x 65 x 29
Degree of protection	IP 65	IP 65	IP 65	IP 65
Connection	M12, 5-pin, male connector, max. cable length = 2 m		M12, 5-pin, male connector, max. cable length = 2 m	
Reference	XGLA112A71	XGLA112D70	XGLA112D70	XGLA312D70



Stations	Common to inductive heads and logistic or automated production tags			
Dimensions (mm) W x H x D	210 x 120 x 60			
Serial link	Standard: RS 485, Uni-TE/Modbus protocol or additional protocol depending on network option selected.			
Connection	Power supply: 1/2"-20 UNF, 3-pin, male connector; To inductive head: M12, 5-pin, female connector			
Supply voltage	24 V DC			
Protocol	Ethernet/Modbus/TCP	Interbus-S	Fipio	Uni-Te/Modbus (std.)
	Transmission speed (Bauds)	10/100 Mb	500 Kb	1.2 Mb
	Connection (network option)	RJ45 connector	M23 connectors	SUB-D male connector
Reference	XGKS1715503	XGKS140421	XGKS130421	XGKS110121

(1) Logistic tags: sold in lots of 10.

Accessories

Power supply	Connection
 24 V DC single-phase 48 W, 2 A supply ABL7RE2402	Inductive head - station jumper cable (M12-M12, 5-pin)
	L = 1 m XZCR1511064D1
	L = 2 m XZCR1511064D2
	Standard serial link, M12 female connector XZCC12FDM40B
	24 V DC supply connection cable, 1/2"-20 UNF female connector XZCC20FDM30B
	RS 232 C / RS 485 line adaptor VZ3N586

A wide range of Human/Machine interfaces to meet your needs!

Harmony

Optimise the creation of your dialogue solutions!

Telemecanique, the world leader for control and signalling components, offers you its ranges of: pushbuttons, switches and pilot lights, beacons and indicator banks (including audible units) and components for hoisting applications.



Unequalled and of high quality, it is the largest offer on the market.

- **Simplicity:** the clip together components ensure simple and secure assembly.
- **Ingenuity:** LED technology for all signalling functions.
- **Flexibility:** of modular construction, the products evolve with the automation system.
- **Robustness:** mechanical performance much higher than standard requirements.
- **Compactness:** the overall dimensions are the smallest on the market.

Magelis

HMI at the *touch* of a finger and the *blink* of an eye.

In order to improve the performance of your production equipment, Telemecanique offers you a complete range of hardware and software specifically for Human/Machine dialogue.



- **Compact,** the range of Magelis display units, terminals and industrial PCs is characterised by its ease of implementation.
- **Ingenious,** the software range simplifies the design of your HMI (Human/Machine Interface) applications.



The new Magelis range, comprising display units, terminals, graphic terminals with keypad or touchscreen and i PC industrial PCs, offers improved robustness for ensuring availability of your installation.

- Take advantage of these new Telemecanique offers that are **open** to the new information and communication technologies.

The essential guide

A selection of the most popular selling products enabling you to quickly locate the most appropriate solution for your application... from pushbuttons to the industrial PC.

Control and signalling units

■ Pushbuttons, switches and pilot lights Ø 16 with plastic bezel, Harmony XB6	2/2 to 2/4
■ LED pilot lights Ø 8 and 12	
Harmony XVL	2/5
■ Pushbuttons, switches and pilot lights Ø 22 with metal bezel, Harmony XB4	2/6 to 2/9
■ Pushbuttons, switches and pilot lights Ø 22 with plastic bezel, Harmony XB5	2/10 to 2/12
■ Control stations	
Harmony XAL	2/13
■ Monolithic pushbuttons, switches and pilot lights Ø 22 with plastic bezel, Harmony XB7	2/14 to 2/15
■ Pushbuttons, switches and pilot lights Ø 30 with metal or plastic bezel, Harmony 9001	2/16 to 2/19
■ Cam switches	
Harmony Series K	2/20 to 2/21
■ Beacons and indicator banks "Universal"	
Harmony XVB / XVP	2/22
■ Beacons and indicator banks "Optimum"	
Harmony XVM / XVDLS / XVE	2/23
■ Beacons and indicator banks "Application"	
Harmony XVD / XVR / XVS	2/24
■ Beacons and indicator banks accessories	
Harmony XV	2/25
■ Pendant control stations	
XAC	2/26 to 2/27

■ Control and signalling units for explosive atmospheres
(see Chapter 10 "Explosive Atmospheres")

Human/Machine Interfaces

■ Display units	
Magelis XBTN and XBTHM	2/28
■ Terminals	
Magelis XBTR, XBTPM, XBTF and XBTG	2/29 to 2/32
■ Industrial PCs	
Magelis Smart iPC, Compact iPC, Modular iPC	2/33 to 2/35
■ Software	
XBTL, Vijeo Designer, Vijeo Look, Monitor Pro	2/36 to 2/38
■ Embedded Web servers and gateways	
FactoryCast	2/39

To benefit from perfect interoperability select Telemecanique software.

- XBTL1001/L1003
- Vijeo Designer
- Vijeo Look
- Monitor Pro
- The FactoryCast HMI Web server



(1):

Voltage	Letter (●)
12...24 V AC/DC (15 mA)	B
48...120 V AC (25 mA)	G
230...240 V AC (25 mA)	M



Illuminated pushbuttons

Type of head			Flush push			
Shape of head			  			
Degree of protection			IP 65 / Nema 4, 4X, 13 / Class II			
Mounting (mm)		panel cut-out	Ø 16.2 ^{+0.2} ₀			
		mounting centres	24 x 18 with rectangular head, 18 x 18 with square or circular head			
Dimensions (mm)		W x H x D (below head)	24 x 18 x 50 with rectangular head, 18 x 18 x 50 with square or circular head			
Connection (3)			Tags for 2.8 x 0.5 Faston connectors or for soldering			
Type of push			Spring return			
			Complete products	Products for user assembly		
			12 ... 24 V AC/DC			
References	white	N/O	XB6 DW1B1B	ZB6 E●1B (1)	ZB6 Z1B	ZB6 DW1
		N/C + N/O	XB6 DW1B5B	ZB6 E●1B (1)	ZB6 Z5B	ZB6 DW1
	green	N/O	XB6 DW3B1B	ZB6 E●3B (1)	ZB6 Z1B	ZB6 DW3
		N/C + N/O	XB6 DW3B5B	ZB6 E●3B (1)	ZB6 Z5B	ZB6 DW3
	red	N/C	XB6 DW4B2B	ZB6 E●4B (1)	ZB6 Z2B	ZB6 DW4
		N/C + N/O	XB6 DW4B5B	ZB6 E●4B (1)	ZB6 Z5B	ZB6 DW4
	yellow	N/O	–	ZB6 E●5B (1)	ZB6 Z1B	ZB6 DW5
		N/C + N/O	XB6 DW5B5B	ZB6 E●5B (1)	ZB6 Z5B	ZB6 DW5
Type of push			Latching			
References	white	N/O	–	ZB6 E●1B (1)	ZB6 Z1B	ZB6 DF1
		N/C + N/O	XB6 DF1B5B	ZB6 E●1B (1)	ZB6 Z5B	ZB6 DF1
	green	N/O	XB6 DF3B1B	ZB6 E●3B (1)	ZB6 Z1B	ZB6 DF3
		N/C + N/O	XB6 DF3B5B	ZB6 E●3B (1)	ZB6 Z5B	ZB6 DF3
	red	N/C	XB6 DF4B2B	ZB6 E●4B (1)	ZB6 Z2B	ZB6 DF4
		N/C + N/O	XB6 DF4B5B	ZB6 E●4B (1)	ZB6 Z5B	ZB6 DF4
	yellow	N/O	–	ZB6 E●5B (1)	ZB6 Z1B	ZB6 DF5
		N/C + N/O	–	ZB6 E●5B (1)	ZB6 Z5B	ZB6 DF5



Pilot lights

Type of head			Smooth lens cap		
Shape of head			rectangular (2)		
			Complete products	Products for user assembly	
			12 ... 24 V AC/DC		
References	white		XB6 DV1BB	ZB6 E●1B (1)	ZB6 DV1
	green		XB6 DV3BB	ZB6 E●3B (1)	ZB6 DV3
	red		XB6 DV4BB	ZB6 E●4B (1)	ZB6 DV4
	yellow		XB6 DV5BB	ZB6 E●5B (1)	ZB6 DV5
	blue		—	ZB6 E●6B (1)	ZB6 DV6

(1) Basic reference, to be completed by the letter B, G or M indicating the required voltage. See voltage table above.

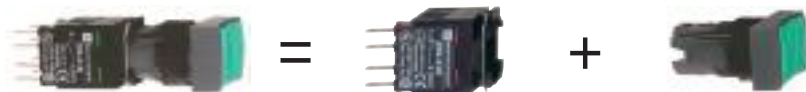
(2) For products with a square head, replace the letter **D** in the reference by the letter **C** (XB6 DW1B1B becomes XB6 CW1B1B).

For products with a circular head, replace the letter **D** in the reference by the letter **A** (XB6 DW1B1B becomes XB6 AW1B1B).

(3) Alternative connection: 1 x 0.5 pins for printed circuit boards.

Contact functions

2



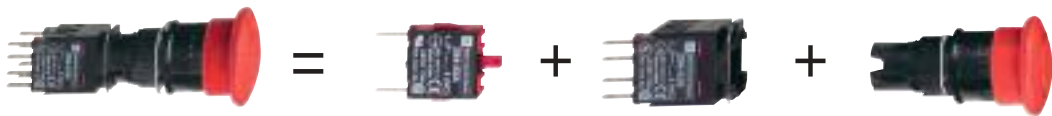
Pushbuttons

Type of head		  		Flush push		
Shape of head				rectangular (1)		
Degree of protection				IP 65 / Nema 4, 4X, 13 / Class II		
Mounting (mm)		panel cut-out		Ø 16.2 ^{+0.2} ₀		
		mounting centres		24 x 18 with rectangular head, 18 x 18 with square or circular head		
Dimensions (mm)		W x H x D (below head)		24 x 18 x 50 with rectangular head, 18 x 18 x 50 with square or circular head		
Connection (2)				Tags for 2.8 x 0.5 Faston connectors or for soldering		
Type of push				Spring return		
				Complete products	Products for user assembly	
						
References	white		N/O	XB6 DA11B	ZB6 Z1B	ZB6 DA1
			N/C + N/O	XB6 DA15B	ZB6 Z5B	ZB6 DA1
	black		N/O	–	ZB6 Z1B	ZB6 DA2
			N/C + N/O	XB6 DA25B	ZB6 Z5B	ZB6 DA2
	green		N/O	XB6 DA31B	ZB6 Z2B	ZB6 DA3
			N/C + N/O	XB6 DA35B	ZB6 Z5B	ZB6 DA3
	red		N/O	–	ZB6 Z1B	ZB6 DA4
			N/C + N/O	XB6 DA45B	ZB6 Z5B	ZB6 DA4

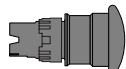
(1) For products with a square head, replace the letter **D** in the reference by the letter **C** (XB6 DA11B becomes XB6 CA11B).

For products with a circular head, replace the letter **D** in the reference by the letter **A** (XB6 DA11B becomes XB6 AA11B).

(2) Alternative connection: 1 x 0.5 pins for printed circuit boards.

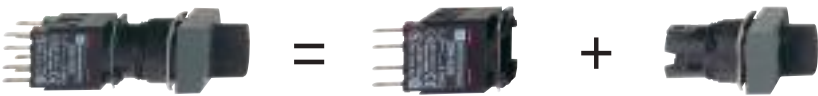


Ø 30 mushroom head Emergency stop pushbuttons (3)

Type of head				Trigger action (EN 418)			
Shape of head				cylindrical			
Type of push				Turn to release			
				Complete products	Products for user assembly		
							
References	red		2 N/C + 1 N/O	XB6 AS8349B	ZB6 E2B	ZB6 Z5B	ZB6 AS834
Type of push				Key release, Ronis 200			
References	red		2 N/C + 1 N/O	XB6 AS9349B	ZB6 E2B	ZB6 Z5B	ZB6 AS934

(3) The trigger action mushroom head Emergency stop pushbuttons conform to standard IEC/EN 60947-5-5, Machinery Directive 98/37/EC and standard EN 418.

Please consult your Regional Sales Office for full details of these standards and directives.



Selector switches and key switches

Type of head		  	Black handle			
Shape of head			rectangular (2)			
Degree of protection			IP 65 / Nema 4, 4X, 13 / Class II (except key switches)			
Mounting (mm)	panel cut-out		Ø 16.2 ^{+0.2} ₀			
	mounting centres		24 x 18 with rectangular head, 18 x 18 with square or circular head			
Dimensions (mm)	W x H x D (below head)		24 x 18 x 50 with rectangular head, 18 x 18 x 50 with square or circular head			
Connection (3)			Tags for 2.8 x 0.5 Faston connectors or for soldering			
Type of operator			Black handle			
			Complete products		Products for user assembly	
						
						
Number and type of positions			2 positions stay put 		2 positions stay put 	
			2 positions spring return to centre 			
References	N/O		XB6 DD221B		XB6 DD22	
	N/C + N/O		XB6 DD225B		XB6 DD22	
Number and type of positions			3 positions stay put 		3 positions stay put 	
			3 positions spring return to centre 			
References	N/O		XB6 DD235B		XB6 DD23	
			ZB6 Z5B		ZB6 DD25	



Type of operator		Ronis key, n° 200				
		Complete products	Products for user assembly			
						
Number and type of positions		2 positions stay put 	2 positions stay put 	2 positions spring return to centre 		
References	N/C + N/O	XB6 DGC5B	ZB6 Z5B	ZB6 DGC	ZB6 Z5B	ZB6 DGB
Number and type of positions		3 positions stay put 	3 positions stay put 	3 positions spring return to centre 		
References	N/C + N/O	XB6 DGH5B	ZB6 Z5B	ZB6 DGH	ZB6 Z5B	ZB6 DGS

(1):

Voltage	Letter (●)
12...24 V AC/DC (15 mA)	B
48...120 V AC (25 mA)	G
230...240 V AC (25 mA)	M



Illuminated selector switches

Type of operator				Coloured handle				
Products for user assembly				 				
Number and type of positions						2 positions stay put 60°	3 positions stay put 60° 60°	
References	white		N/C + N/O	ZB6 E●1B (1)	ZB6 Z5B	ZB6 DD02	ZB6 DD03	ZB6 YK1
	green		N/C + N/O	ZB6 E●3B (1)	ZB6 Z5B	ZB6 DD02	ZB6 DD03	ZB6 YK3
	red		N/C + N/O	ZB6 E●4B (1)	ZB6 Z5B	ZB6 DD02	ZB6 DD03	ZB6 YK4

(1) Basic reference, to be completed by the letter B, G or M indicating the required voltage. See voltage table above.
(2) For products with a square head, replace the letter D in the reference by the letter C (XB6 DD221B becomes XB6 CD221B).
For products with a circular head, replace the letter D in the reference by the letter A (XB6 DD221B becomes XB6 AD221B).
(3) Alternative connection: 1 x 0.5 pins for printed circuit boards.

LED pilot lights Ø 8 and 12

(1):

Voltage	Number (●)
5 V (25 mA)	1
12 V (18 mA)	2
24 V (18 mA)	3
48 V (10 mA)	4



2

LED pilot lights		With black bezel		With integral lens cap	
Type of head		Protruding LED, Ø 8 mm		Covered LED, Ø 8 mm	Covered LED, Ø 12 mm
		IP 40, IP 65 with seal (2)			
Degree of protection	panel cut-out	Ø 8.2 mm		Ø 8.2 mm	Ø 12.2 mm
	mounting centres	12.5 x 12.5 mm		10.5 x 10.5 mm	16.5 x 16.5 mm
Dimensions (mm)	Ø x Depth (below head)	Ø 12 x 32		Ø 10 x 34	Ø 16 x 45
Connection		Tags (3)		Tags (3)	Threaded connectors
References (1)	green ●	XVL A1●3		XVL A2●3	XVL A3●3
	red ●	XVL A1●4		XVL A2●4	XVL A3●4
	yellow ●	XVL A1●5		XVL A2●5	XVL A3●5
Tightening key		For Ø 8 mm pilot lights		For Ø 12 mm pilot lights	
References		XVL X08		XVL X12	

(1) Basic reference, to be completed by the number 1, 2, 3 or 4 indicating the required voltage. See voltage table above.

(2) For an IP 65 degree of protection, include the seals: XVL Z911 for pilot lights XVL A1●● and XVL A2●●; XVL Z912 for pilot lights XVL A3●●.

(3) Tags for 2.8 x 0.5 Faston connectors or for soldering.

Sub-assemblies & accessories for Ø 16 plastic bezel control and signalling units



Sub-assemblies		Bodies for pushbuttons and selector switches			Bodies for pilot lights			
Rated operational characteristics, AC-15: Ue = 240 V and Ie = 1.5 A or Ue = 120 V and Ie = 3 A					Consumption			
Positive operation of contacts conforming to IEC/EN 60947-5-1: N/C contacts with positive opening operation, positive opening force 20 N					15 mA	12...24 V AC/DC		
					25 mA	48...120 V AC		
					25 mA	230...240 V AC		
	Type of contact	Fixing collar + contacts	Contacts	Pilot light bodies	12 ... 24 V	48 ... 120 V	230 ... 240 V	
References	N/O	ZB6 Z1B	ZB6 E1B	White 	ZB6 EB1B	ZB6 EG1B	ZB6 EM1B	
	N/C	ZB6 Z2B	ZB6 E2B	Green 	ZB6 EB3B	ZB6 EG3B	ZB6 EM3B	
	2 N/O	ZB6 Z3B	–	Red 	ZB6 EB4B	ZB6 EG4B	ZB6 EM4B	
	2 N/C	ZB6 Z4B	–	Yellow 	ZB6 EB5B	ZB6 EG5B	ZB6 EM5B	
	N/O + N/C	ZB6 Z5B	–	Blue 	ZB6 EB6B	ZB6 EG6B	ZB6 EM6B	

Accessories							
Legend holders		24 x 28 mm (8 x 21 mm legend)			24 x 36 mm (16 x 21 mm legend)		
Blank legend	Background colour	without legend	yellow or white	black or red	without legend	yellow or white	black or red
References (10)*		ZB6 YD20	ZB6 YD21	ZB6 YD22	ZB6 YD30	ZB6 YD31	ZB6 YD32
Blank legends for legend holders		8 x 21 mm (24 x 28 mm legend holder)			16 x 21 mm (24 x 36 mm legend holder)		
	Background colour	–	yellow or white	black or red	–	yellow or white	black or red
References (20)*		–	ZB6 Y1001	ZB6 Y2001	–	ZB6 Y4001	ZB6 Y3001
Ø 45 mm yellow legend for mushroom head Emergency stop pushbutton							
	Marking	Blank, for engraving		EMERGENCY STOP		ARRET D'URGENCE	
References		ZB6 Y7001		ZB6 Y7330		ZB6 Y7130	
	Body/fixing collar	Plate		Tightening tool		Dismantling tool	
		anti-rotation		and slackening, for fixing nut		for removal of contact blocks	
References	ZB6 Y009 (10)*	ZB6 Y003 (10)*		ZB6 Y905 (2)*		ZB6 Y018 (5)*	
	Protective shutter for pushbuttons and switches			Connector		Blanking plug	
	for rectangular heads	for circular and square heads		Faston, female		IP 65	
References	ZB6 YD001	ZB6 YA001		ZB6 Y004 (100)*		ZB6 Y005 (10)*	

* sold in lots of





Pushbuttons, spring return

Type of head				Chromium plated circular bezel					
Degree of protection				IP 65 / Nema 4X, 13 / Class I. (IP 66 for booted pushbuttons)					
Mounting (mm)		panel cut-out		Ø 22.5 (22.4 ^{+0.4} ₀ recommended)					
		mounting centres		30 (horizontal) x 40 (vertical)					
Depth (mm)		below head		43					
Connection (1)				Screw clamp terminals					
Type of push				Flush			Flush, booted		
Unmarked		Products		Complete	For user assembly		Complete	For user assembly	
									
References	black		N/O	XB4 BA21	ZB4 BZ101	ZB4 BA2	XB4 BP21	ZB4 BZ101	ZB4 BP2
	green		N/O	XB4 BA31	ZB4 BZ101	ZB4 BA3	XB4 BP31	ZB4 BZ101	ZB4 BP3
	red		N/C	XB4 BA42	ZB4 BZ102	ZB4 BA4	XB4 BP42	ZB4 BZ102	ZB4 BP4
	yellow		N/O	XB4 BA51	ZB4 BZ101	ZB4 BA5	XB4 BP51	ZB4 BZ101	ZB4 BP5
	blue		N/O	XB4 BA61	ZB4 BZ101	ZB4 BA6	XB4 BP61	ZB4 BZ101	ZB4 BP6
Type of push				Flush					
With international marking		Products		Complete	For user assembly				
References	green		N/O	XB4 BA3311	ZB4 BZ101	ZB4 BA331	–	–	–
	red		N/C	XB4 BA4322	ZB4 BZ102	ZB4 BA432	–	–	–
	white		N/O	XB4 BA3341	ZB4 BZ101	ZB4 BA334	–	–	–
	black		N/O	XB4 BA3351	ZB4 BZ101	ZB4 BA335	–	–	–
Type of push				Projecting			Mushroom head, Ø 40 mm		
Unmarked		Products		Complete	For user assembly		Complete	For user assembly	
									
References	black		N/O	–	–	–	XB4 BC21	ZB4 BZ101	ZB4 BC2
	red		N/C	XB4 BL42	ZB4 BZ102	ZB4 BL4	–	–	–
Type of push				Double-headed pushbuttons			Double-headed pushbuttons, booted		
Degree of protection				IP 40			IP 66		
With international marking		Products		Complete	For user assembly		Complete	For user assembly	
									
References	green / red	 	N/C + N/O	XB4 BL845	ZB4 BZ105	ZB4 BL8434	XB4 BL945	ZB4 BZ105	ZB4 BL9434

(1) Alternative connections: plug-in connector, Faston connectors (6.35 and 2 x 2.8).

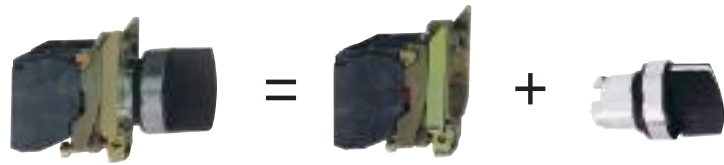


Ø 40 mm mushroom head Emergency stop pushbuttons (2)

		Latching			Trigger action (EN 418)		
Type of push		Push-pull (N/C)			Push-pull (N/C + N/O)		
Unmarked	Products	Complete	For user assembly		Complete	For user assembly	
References	red ● N/C or N/C + N/O	XB4 BT42	ZB4 BZ102	ZB4 BT4	XB4 BT845	ZB4 BZ105	ZB4 BT84
Type of push		Turn to release (N/C)			Turn to release (N/C + N/O)		
References	red ● N/C or N/C + N/O	XB4 BS542	ZB4 BZ102	ZB4 BS54	XB4 BS8445	ZB4 BZ105	ZB4 BS844
Type of push		Key release (N/C)			Key release (N/C + N/O)		
References	red ● N/C or N/C + N/O	XB4 BS142	ZB4 BZ102	ZB4 BS14	XB4 BS9445	ZB4 BZ105	ZB4 BS944

(2) The mushroom head Emergency stop pushbuttons conform to standard IEC/EN 60947-5-5 and Machinery Directive 98/37/EC. Trigger action mushroom head Emergency stop pushbuttons conform to standard EN 418.

Contact functions



2

Selector switches and key switches

Type of head		Chromium plated circular bezel			
Degree of protection		IP 66 / Nema 4X, 13 / Class I			
Mounting (mm)	panel cut-out	Ø 22.5 (22.4 ^{+0.4} ₀ recommended)			
	mounting centres	30 (horizontal) x 40 (vertical)			
Depth (mm)	below head	43			
Connection (1)		Screw clamp terminals			
Type of operator		Handle			
Products		Complete	For user assembly	Complete	For user assembly
Number and type of positions		2 positions stay put	2 positions stay put	2 positions spring return to left	2 positions spring return to left
References	black ● N/O	XB4 BD21	ZB4 BZ101 ZB4 BD2	XB4 BD41	ZB4 BZ101 ZB4 BD4
Number and type of positions		3 positions stay put	3 positions stay put	3 positions spring return to centre	3 positions spring return to centre
References	black ● N/O + N/O	XB4 BD33	ZB4 BZ103 ZB4 BD3	XB4 BD53	ZB4 BZ103 ZB4 BD5



Type of operator		Key, n° 455			
Products		Complete	For user assembly	Complete	For user assembly
Number and type of positions (2)		2 positions stay put	2 positions stay put	2 positions stay put	2 positions stay put
References	black ● N/O	XB4 BG21	ZB4 BZ101 ZB4 BG2	XB4 BG41	ZB4 BZ101 ZB4 BG4
Number and type of positions		2 positions spring return to left	2 positions spring return to left	3 positions stay put	3 positions stay put
References	black ● N/O	XB4 BG61	ZB4 BZ101 ZB4 BG6	–	–
	black ● N/O + N/O	–	–	XB4 BG33	ZB4 BZ103 ZB4 BG3

Separate components



Electrical blocks

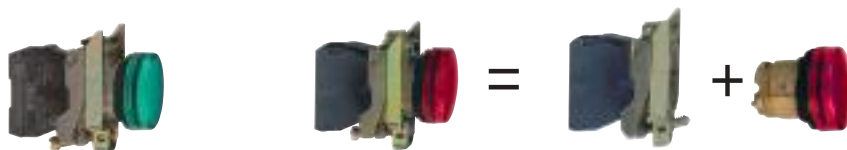
Single contact blocks

Rated operational characteristics		AC-15, 240 V - 3 A
Positive operation of contacts conforming to IEC/EN 60947-5-1		All functions incorporating a N/C contact are positive opening operation
References (5)*	N/O	ZBE 101
	N/C	ZBE 102

(1) Alternative connections: plug-in connector, Faston connectors (6.35 and 2 x 2.8).

(2) The symbol  indicates key withdrawal position.

* sold in lots of



Pilot lights

Type of head		Circular bezel	
		Smooth lens cap	
Degree of protection		IP 66 / Nema 4X, 13 / Class I	
Mounting (mm)	panel cut-out	Ø 22.5 (22.4 ^{+0.4} ₀ recommended)	
	mounting centres	30 (horizontal) x 40 (vertical)	
Depth	below head	43	
Connection (1)		Screw clamp terminals	
Light source		Integral LED	Direct supply for BA 9s bulb (not included)
Products		Complete	Complete For user assembly
Supply voltage		24 V AC/DC	48...120 V AC
References		230...240 V AC	250 V max., 2.4 W max.
	white		XB4 BVB1
	green		XB4 BVB3
	red		XB4 BVB4
	yellow		XB4 BVB5
	blue		XB4 BVB6
		XB4 BVG1	XB4 BVG3
		XB4 BVG4	XB4 BVG5
		XB4 BVG6	XB4 BVM1
		XB4 BVM3	XB4 BVM4
		XB4 BVM5	XB4 BVM6
		XB4 BV61	XB4 BV63
		XB4 BV64	XB4 BV65
		XB4 BV6	XB4 BV01
		XB4 BV03	XB4 BV04
		XB4 BV05	XB4 BV06
		–	–



Illuminated pushbuttons and selector switches

Type		Flush push, spring return, illuminated pushbuttons	
Light source		Integral LED	Direct supply for BA 9s bulb (not included)
Products		Complete	Complete For user assembly
Supply voltage		24 V AC/DC	48...120 V AC
References		230...240 V AC	250 V max., 2.4 W max.
	white	N/C + N/O	XB4 BW31B5
	green	N/C + N/O	XB4 BW33B5
	red	N/C + N/O	XB4 BW34B5
	yellow	N/C + N/O	XB4 BW35B5
	blue	N/C + N/O	XB4 BW36B5
		XB4 BW31G5	XB4 BW33G5
		XB4 BW34G5	XB4 BW35G5
		XB4 BW36G5	XB4 BW31M5
		XB4 BW33M5	XB4 BW34M5
		XB4 BW35M5	XB4 BW36M5
		XB4 BW3165	XB4 BW3365
		XB4 BW3465	XB4 BW3565
		XB4 BW065	XB4 BW065
		XB4 BW31	XB4 BW33
		XB4 BW34	XB4 BW35
		–	–



Type		Double-headed pushbuttons with LED pilot light (1 flush green push, 1 projecting red push)		Illuminated selector switches (2 position stay put)	
Degree of protection		IP 40		IP 65	
Light source		Integral LED		Integral LED	
Products		Complete		Complete	
Supply voltage		24 V AC/DC	48...120 V AC	24 V AC/DC	48...120 V AC
References		230...240 V AC	250 V max., 2.4 W max.	230...240 V AC	250 V max., 2.4 W max.
	green	N/C + N/O	–	XB4 BK123B5	XB4 BK123G5
	red	N/C + N/O	–	XB4 BK124B5	XB4 BK124G5
	yellow	N/C + N/O	XB4 BW84B5	XB4 BK125B5	XB4 BK125G5
		XB4 BW84G5	XB4 BW84M5	XB4 BK123M5	XB4 BK124M5
		XB4 BW84M5	XB4 BW84M5	XB4 BK125M5	XB4 BK125M5

(1) Alternative connections: plug-in connector, Faston connectors (6.35 and 2 x 2.8).

Separate components and accessories

2

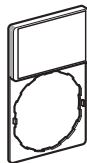
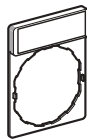


Electrical blocks

Single contact blocks		Light blocks with integral LED				Light block, direct supply	
Rated operational characteristics	AC-15, 240 V - 3 A	Consumption					
		18 mA	24 V AC/DC				
Positive operation of contacts	N/C contacts with positive	14 mA	120 V AC				
conforming to IEC/EN 60947-5-1	opening operation	14 mA	240 V AC				
		To combine with heads for integral LED				For BA 9s bulb (not included)	
References (5)*	N/O	ZBE 101	white	24 V AC/DC	48...120 V AC	230...240 V AC	250 V max., 2.4 W max.
	N/C	ZBE 102	green	ZBV B1	ZBV G1	ZBV M1	ZBV 6
			red	ZBV B3	ZBV G3	ZBV M3	Colour provided by lens
			yellow	ZBV B4	ZBV G4	ZBV M4	
			blue	ZBV B5	ZBV G5	ZBV M5	
				ZBV B6	ZBV G6	ZBV M6	



Diecast metal enclosures (Zinc alloy, usable depth 49 mm)		1 vertical row				2 vertical rows		
Number of cut-outs	Front face dimensions	1	2	3	4	2	4	6
References	80 x 80 mm	XAP M1201	–	–	–	XAP M1202	–	–
	80 x 130 mm	–	XAP M2202	XAP M2203	–	–	XAP M2204	–
	80 x 175 mm	–	–	XAP M3203	XAP M3204	–	–	XAP M3206



Accessories

Legend holders, 30 x 40 mm, for 8 x 27 mm legends

References (10)*	Marking	Background colour: black or red						white or yellow
	Blank	ZBY 2101						ZBY 4101
	International	0 (red background)	ZBY 2931	I	ZBY 2147	AUTO	ZBY 2115	STOP ZBY 2304
	English	OFF	ZBY 2312	ON	ZBY 2311	START	ZBY 2303	–
	French	ARRET (red b/grnd)	ZBY 2104	ARRET-MARCHE	ZBY 2166	MARCHE	ZBY 2103	–
	German	AUS	ZBY 2204	AUS-EIN	ZBY 2266	EIN	ZBY 2203	–
	Spanish	PARADA (red b/grnd)	ZBY 2404	PARADA-MARCHA	ZBY 2466	MARCHA	ZBY 2403	–

Legend holders, 30 x 50 mm, for 18 x 27 mm legends

Background colour	black or red	white or yellow
References (10)*	Blank	ZBY 6101

Ø 60 mm legend for mushroom head Emergency stop pushbutton

Background colour	yellow				
Marking	Blank	EMERGENCY STOP	ARRET D'URGENCE	NOT-AUS	PARADA DE EMERGENCIA
References	ZBY 9101	ZBY 9330	ZBY 9130	ZBY 9230	ZBY 9430

(1) Alternative connections: plug-in connector, Faston connectors (6.35 and 2 x 2.8).

* sold in lots of





Pushbuttons, spring return

Type of head		Circular bezel						
Degree of protection		IP 66 / Nema 4X, 13 / Class II. (IP 66 for booted pushbuttons)						
Mounting (mm)	panel cut-out	Ø 22.5 (22.4 ^{+0.4} ₀ recommended)						
	mounting centres	30 (horizontal) x 40 (vertical)						
Depth (mm)	below head	43						
Connection (1)		Screw clamp terminals						
Type of push		Flush			Flush, booted			
Unmarked	Products	Complete	For user assembly		Complete	For user assembly		
References	black ● N/O	XB5 AA21	ZB5 AZ101	ZB5 AA2	XB5 AP21	ZB5 AZ101	ZB5 AP2	
	green ● N/O	XB5 AA31	ZB5 AZ101	ZB5 AA3	XB5 AP31	ZB5 AZ101	ZB5 AP3	
	red ● N/C	XB5 AA42	ZB5 AZ102	ZB5 AA4	XB5 AP42	ZB5 AZ102	ZB5 AP4	
	yellow ● N/O	XB5 AA51	ZB5 AZ101	ZB5 AA5	XB5 AP51	ZB5 AZ101	ZB5 AP5	
	blue ● N/O	XB5 AA61	ZB5 AZ101	ZB5 AA6	XB5 AP61	ZB5 AZ101	ZB5 AP6	
Type of push		Flush			Mushroom head, Ø 40 mm			
With international marking	Products	Complete	For user assembly		Complete	For user assembly		
References	green ⓘ N/O	XB5 AA3311	ZB5 AZ101	ZB5 AA3311	–	–	–	
	red ⓘ N/C	XB5 AA4322	ZB5 AZ102	ZB5 AA4322	–	–	–	
	white ⓘ N/O	XB5 AA3341	ZB5 AZ101	ZB5 AA334	–	–	–	
	black ⓘ N/O	XB5 AA3351	ZB5 AZ101	ZB5 AA335	–	–	–	
Type of push		Projecting			Double-headed pushbuttons, booted			
Unmarked	Products	Complete	For user assembly		Complete	For user assembly		
References	black ● N/O	–	–	–	XB5 AC21	ZB5 AZ101	ZB5 AC2	
	red ● N/C	XB5 AL42	ZB5 AZ102	ZB5 AL4	–	–	–	
Type of push		Double-headed pushbuttons			Double-headed pushbuttons, booted			
Degree of protection		IP 40			IP 66			
With international marking	Products	Complete	For user assembly		Complete	For user assembly		
References	green / red ⓘ N/C + N/O	XB5 AL845	ZB5 AZ105	ZB5 AL8434	XB5 AL945	ZB5 AZ105	ZB5 AL9434	

(1) Alternative connections: plug-in connector, Faston connectors (6.35 and 2 x 2.8).



Ø 40 mm mushroom head Emergency stop pushbuttons (2)

		Latching			Trigger action (EN 418)			
Type of push		Push-pull (N/C)			Push-pull (N/C + N/O)			
Unmarked	Products	Complete	For user assembly		Complete	For user assembly		
References	red ● N/C or N/C + N/O	XB5 AT42	ZB5 AZ102	ZB5 AT4	XB5 AT845	ZB5 AZ105	ZB5 AT84	
Type of push		Turn to release (N/C)			Turn to release (N/C + N/O)			
References	red ● N/C or N/C + N/O	XB5 AS542	ZB5 AZ102	ZB5 AS54	XB5 AS8445	ZB5 AZ105	ZB5 AS844	
Type of push		Key release (N/C)			Key release (N/C + N/O)			
References	red ● N/C or N/C + N/O	XB5 AS142	ZB5 AZ102	ZB5 AS14	XB5 AS9445	ZB5 AZ105	ZB5 AS944	

(2) The mushroom head Emergency stop pushbuttons conform to standard IEC/EN 60947-5-5 and Machinery Directive 98/37/EC.

Trigger action mushroom head Emergency stop pushbuttons conform to standard EN 418.

Contact functions



2

Selector switches and key switches

Type of head		Circular bezel			
Degree of protection		IP 66 / Nema 4X, 13 / Class II			
Mounting (mm)	panel cut-out	Ø 22.5 (22.4 ^{+0.4} ₀ recommended)			
	mounting centres	30 (horizontal) x 40 (vertical)			
Depth (mm)	below head	43			
Connection (1)		Screw clamp terminals			
Type of operator		Handle			
Products		Complete	For user assembly		Complete
Number and type of positions		2 positions stay put	2 positions stay put		2 positions spring return to left
References	black N/O	XB5 AD21	ZB5 AZ101	ZB5 AD2	XB5 AD41
Number and type of positions		3 positions stay put	3 positions stay put		3 positions spring return to left
References	black N/O + N/O	XB5 AD33	ZB5 AZ103	ZB5 AD3	XB5 AD53
Type of operator		Key, n° 455			
Number and type of positions (2)		2 positions stay put	2 positions stay put		2 positions stay put
References	black N/O	XB5 AG21	ZB5 AZ101	ZB5 AG2	XB5 AG41

(2) The symbol indicates key withdrawal position.

Separate components and accessories

Electrical blocks

Single contact blocks			Light blocks with integral LED				Light block, direct supply	
			To combine with heads for integral LED				For BA 9s bulb (not included)	
				24 V AC/DC	48...120 V AC	230...240 V AC	250 V max., 2.4 W max.	
References (5)*	N/O	ZBE 101	white	ZBV B1	ZBV G1	ZBV M1	ZBV6	
	N/C	ZBE 102	green	ZBV B3	ZBV G3	ZBV M3	Colour provided by lens	
			red	ZBV B4	ZBV G4	ZBV M4		
			yellow	ZBV B5	ZBV G5	ZBV M5		
			blue	ZBV B6	ZBV G6	ZBV M6		

Accessories

Legend holders, 30 x 40 mm, for 8 x 27 mm legends

Marking	Background colour: black or red							white or yellow
References (10)*	Blank	ZBY 2101						
References	International	0 (red background)	ZBY 2931	I	ZBY 2147	AUTO	ZBY 2115	STOP
	English	OFF	ZBY 2312	ON	ZBY 2311	START	ZBY 2303	—
	French	ARRET (red b/grnd)	ZBY 2104	ARRET-MARCHE	ZBY 2166	MARCHE	ZBY 2103	—
	German	AUS	ZBY 2204	AUS-EIN	ZBY 2266	EIN	ZBY 2203	—
	Spanish	PARADA (red b/grnd)	ZBY 2404	PARADA-MARCHA	ZBY 2466	MARCHA	ZBY 2403	—

Legend holders, 30 x 50 mm, for 18 x 27 mm legends

Background colour	black or red	white or yellow
References (10)*	Blank	ZBY 6101

Ø 60 mm legend for mushroom head Emergency stop pushbutton

Background colour	yellow				
Marking	Blank	EMERGENCY STOP	ARRET D'URGENCE	NOT-AUS	PARADA DE EMERGENCIA
References	ZBY 9101	ZBY 9330	ZBY 9130	ZBY 9230	ZBY 9430
Body/fixing collar			Fixing nut	Bezel tool	
for electrical block (contact or light)			for head	for tightening fixing nut ZB5 AZ901	
References			ZB5 AZ901 (10)*	ZB5 AZ905	
				Plate	
				anti-rotation	
				ZB5 AZ902	

(1) Alternative connections: plug-in connector, Faston connectors (6.35 and 2 x 2.8).

* sold in lots of



Pilot lights

Type of head			Circular bezel					
			Smooth lens cap					
Degree of protection			IP 66 / Nema 4X, 13 / Class II					
Mounting (mm)	panel cut-out		Ø 22.5 (22.4 ^{+0.4} ₀ recommended)					
	mounting centres		30 (horizontal) x 40 (vertical)					
Depth			43					
Connection (1)			Screw clamp terminals					
Light source			Integral LED			Direct supply for BA 9s bulb (not included)		
Products			Complete			Complete	For user assembly	
								
Supply voltage			24 V AC/DC	48...120 V AC	230...240 V AC	250 V max., 2.4 W max.		
References	white		XB5 AVB1	XB5 AVG1	XB5 AVM1	XB5 AV61	ZB5 AV6	ZB5 AV01
	green		XB5 AVB3	XB5 AVG3	XB5 AVM3	XB5 AV63	ZB5 AV6	ZB5 AV03
	red		XB5 AVB4	XB5 AVG4	XB5 AVM4	XB5 AV64	ZB5 AV6	ZB5 AV04
	yellow		XB5 AVB5	XB5 AVG5	XB5 AVM5	XB5 AV65	ZB5 AV6	ZB5 AV05
	blue		XB5 AVB6	XB5 AVG6	XB5 AVM6	–	–	–



Illuminated pushbuttons and selector switches

Type				Flush push, spring return, illuminated pushbuttons					
Light source				Integral LED			Direct supply for BA 9s bulb (not included)		
Products				Complete			Complete	For user assembly	
Supply voltage				24 V AC/DC	48...120 V AC	230...240 V AC	250 V max., 2.4 W max.		
References	white		N/C + N/O	XB5 AW31B5	XB5 AW31G5	XB5 AW31M5	XB5 AW3165	ZB5 AW065	ZB5 AW31
	green		N/C + N/O	XB5 AW33B5	XB5 AW33G5	XB5 AW33M5	XB5 AW3365	ZB5 AW065	ZB5 AW33
	red		N/C + N/O	XB5 AW34B5	XB5 AW34G5	XB5 AW34M5	XB5 AW3465	ZB5 AW065	ZB5 AW34
	yellow		N/C + N/O	XB5 AW35B5	XB5 AW35G5	XB5 AW35M5	XB5 AW3565	ZB5 AW065	ZB5 AW35
	blue		N/C + N/O	XB5 AW36B5	XB5 AW36G5	XB5 AW36M5	—	—	—



Type		Double-headed pushbuttons with LED pilot light (1 flush green push, 1 projecting red push)			Illuminated selector switches (2 position stay put)		
Degree of protection		IP 40			IP 65		
Light source		Integral LED			Integral LED		
Products		Complete			Complete		
Supply voltage		24 V AC/DC	48...120 V AC	230...240 V AC	24 V AC/DC	48...120 V AC	230...240 V AC
References	green	N/C + N/O	–	–	XB5 AK123B5	XB5 AK123G5	XB5 AK123M5
	red	N/C + N/O	–	–	XB5 AK124B5	XB5 AK124G5	XB5 AK124M5
	yellow	N/C + N/O	XB5 AW84B5	XB5 AW84G5	XB5 AW84M5	XB5 AK125B5	XB5 AK125G5

(1) Alternative connections: plug-in connector, Faston connectors (6.35 and 2 x 2.8).

Separate components and accessories: see previous page.

(1):

Number of cut-outs	Number (●)
1	1
2	2
3	3
4	4
5	5



Complete stations with 1 pushbutton, selector switch or key switch

(light grey RAL 7035 base with dark grey RAL 7016 lid)

Degree of protection			IP 65 / Nema 4X and 13 / Class II				
Dimensions (mm)			W x H x D				
Fixing (mm)			2 x Ø 4.3 on 54 mm centres				
Function			1 Start or Stop function			1 Start-Stop function	
Marking			On spring return push			On legend holder and legend below head	
Number and type of pushbutton/selector switch/key switch			1 flush green p/b	1 flush red p/b	1 projecting red p/b	1 2 position stay put selector switch or key switch	
						Black handle	Key n° 455 (key withdrawal LH pos.)
References	N/O	I	XAL D102	—	—	—	—
		Start	XAL D103	—	—	—	—
		O - I	—	—	—	XAL D134	XAL D144
	N/C	O	—	XAL D112	XAL D115	—	—

(1) Empty enclosures:

Basic reference: XAL K0●, replace the ● by the number of cut-outs required (see cut-out table above)



Function			Emergency stop (2) (light grey RAL 7035 base with yellow RAL 1012 lid)			
Number and type of mushroom head pushbutton			1 red Ø 40 head, turn to release		1 red Ø 40 head, key release	
Latching mechanism			Trigger action (EN 418)		Latching	Latching
References	N/C		—	XAL K174	XAL K184	
	N/C + N/C		XAL K178F	XAL K174F	XAL K184F	
	N/C + N/O		XAL K178E	XAL K174E	XAL K184E	
	N/C + N/C + N/O		XAL K178G	XAL K174G	XAL K184G	

(2) The mushroom head Emergency stop pushbuttons conform to standard IEC/EN 60947-5-5 and Machinery Directive 98/37/EC.

Trigger action mushroom head pushbuttons conform to standard EN 418.



(1) Empty enclosures:

Basic reference: XAL K0●, replace the ● by the number of cut-outs required (see cut-out table above)

Complete stations with 2 and 3 pushbuttons or 2 pushbuttons + 1 pilot light

(light grey RAL 7035 base with dark grey RAL 7016 lid)

Dimensions (mm)			W x H x D						2-way control stations: 68 x 106 x 62; 3-way control stations: 68 x 136 x 87					
Fixing (mm)									2-way control stations: 2 x Ø 4.3 on 54 x 68 centres; 3-way control stations: 2 x Ø 4.3 on 54 x 98 centres					
Function			Start-Stop functions			2 functions		3 functions						
Marking			On spring return push											
Number and type of pushbutton/pilot light			1 flush green p/b 1 flush red p/b		1 flush green pushbutton 1 flush red pushbutton 1 red pilot light with integral LED (1)		1 flush white p/b 1 flush black p/b		1 flush white p/b 1 flush red p/b 1 flush black p/b		1 flush white p/b 1 Ø 30 red mushroom head p/b 1 flush black p/b			
					24 V AC/DC		230 V AC							
References	N/O + N/C	I - O	XAL D213	XAL D363B	XAL D363M	–	–	–	–	–	–	–		
		Start - Stop	XAL D215	–	–	–	–	–	–	–	–			
	N/O + N/O	↕	–	–	–	XAL D222	–	–	–	–	–			
	N/O + N/C + N/O	↕ ↕ ↕	–	–	–	–	XAL D324	XAL D328						

Accessories		Standard contact blocks		(1) Light blocks with integral LED, colour red	
Description		N/O contact	N/C contact	24 V AC/DC	230 V AC
References		ZEN L1111	ZEN L1121	ZAL VB4	ZAL VM4



Type of head						Flush or projecting push			
Degree of protection						circular			
Mounting (mm)			panel cut-out			IP 54, class II			
			mounting centres			Ø 22.4 (0 +0.1)			
Dimensions (mm)			Ø x Depth (below head)			30 (horizontal) x 40 (vertical)			
Connection (1)						Ø 29 x 41.5 (Ø 40 x 41.5 for Emergency stop)			
						Screw clamp terminals, 1 x 0.34 mm ² to 1 x 1.5 mm ²			
Type of push						Flush, spring return		Flush, push and push-to-release	
References (10)*	black		N/O			XB7 EA21P		XB7 EH21P	
			C/O			XB7 EA25P		XB7 EH25P	
	green		N/O			XB7 EA31P		XB7 EH31P	
			C/O			XB7 EA35P		XB7 EH35P	
	red		N/C			XB7 EA42P		–	
			C/O			XB7 EA45P		–	
	yellow		N/O			XB7 EA51P		–	
Type of push						Flush, spring return		Projecting, spring return	
References	green		N/O			XB7 EA3131P		–	
	red		N/C			–		XB7 EL4232P	
	white		N/O + C/O			XB7 EA11341P		–	
	black		N/O + C/O			XB7 EA21341		–	



Type of operator		Black handle		Ronis key, n° 455	
Number and type of positions		2 positions stay put	3 positions stay put	2 positions stay put	3 positions stay put
References (10*)	N/O	XB7 ED21P	–	XB7 EG21P	–
	N/C + N/O	XB7 ED25P	–	–	–
	2 N/O	–	XB7 ED33P	–	XB7 EG33P



Type of push			Turn to release	Key release, Ronis 455
References (10)*	red	N/C	XB7 ES542P	XB7 ES142P
	red	N/C + N/O	XB7 ES545P	XB7 ES145P

* sold in lots of 10

Contact functions and light functions

(1):

Voltage	Letter (●)
24 V AC/DC	B
120 V AC	G
230 V AC	M



Illuminated pushbuttons

Type of head		Projecting push	
		circular	
Degree of protection		IP 54, class II	
Mounting (mm)	panel cut-out	Ø 22.4 (0 +0.1)	
	mounting centres	30 (horizontal) x 40 (vertical)	
Dimensions (mm)	Ø x Depth (below head)	Ø 29 x 41.5, (Ø 40 x 41.5 for Emergency stop)	
Connection (2)		Screw clamp terminals, 1 x 0.34 mm ² to 1 x 1.5 mm ²	
Type of push		Spring return	
Light source		Integral LED	Incandescent bulb
Supply voltage		24 V DC or 230 V AC	direct supply (bulb not included)
References (10)*	green  N/O	XB7 EW33●1P (1)	XB7 EW3361P
	red  N/O	XB7 EW34●1P (1)	XB7 EW3461P
	N/C	XB7 EW34●2P (1)	–
	yellow  N/O	XB7 EW35●1P (1)	XB7 EW3561P
Type of push		Push and push-to-release	
Light source		Integral LED	Incandescent bulb
Supply voltage		24 V DC or 230 V AC	direct supply (bulb not included)
References (10)*	green  N/O	XB7 EH03●1P (1)	XB7 EH0361P
	red  N/O	XB7 EH04●1P (1)	XB7 EH0461P
	N/C	XB7 EH04●2P (1)	–
	yellow  N/O	XB7 EH05●1P (1)	XB7 EH0561P



Pilot lights

Light source		Integral LED	Incandescent bulb direct supply (bulb not included)	Incandescent bulb direct through resistor (bulb included)
Supply voltage		24VAC/DC or 120VAC or 230...240VAC	6 or 24 V DC, or 130 V AC	230 V AC
References (10)*	white 	XB7 EV01●1P (1)	XB7 EV61P	XB7 EV71P
	green 	XB7 EV03●1P (1)	XB7 EV63P	XB7 EV73P
	red 	XB7 EV04●1P (1)	XB7 EV64P	XB7 EV74P
	yellow 	XB7 EV05●1P (1)	XB7 EV65P	XB7 EV75P
	blue 	XB7 EV06●P (1)	XB7 EV66P	XB7 EV76P
	orange 	XB7 EV08●P (1)	XB7 EV68P	XB7 EV78P

Incandescent bulbs, long life

BA 9s base fitting, Ø 11 mm max., length 28 mm max.

References	6 V (1.2 W)	24 V (2 W)	130 V (2.4 W)
	DL1 CB006	DL1 CE024	DL1 CE130

(1) Basic reference, to be completed by the letter B, G or M indicating the required voltage. See voltage table above.

(2) Alternative connection: 1 x 6.35 and 2 x 2.8 mm Faston connectors.

* sold in lots of 10



Pushbuttons, spring return

Table with 4 columns: Type of push, Colour of push, Degree of protection, Mounting (mm), Depth below head (mm), Connection, and References. It lists specifications for flush, projecting, and projecting (high guard) pushbuttons in various colors.



Mushroom head Emergency stop pushbuttons, latching (1)

Table with 4 columns: Type of push, Degree of protection, Mounting (mm), Depth below head (mm), Connection, and References. It lists specifications for spring return and push-pull mushroom head emergency stop pushbuttons.

(1) The mushroom head Emergency stop pushbuttons conform to standard IEC/EN 60947-5-5 and Machinery Directive 98/37/EC. For conformity to standard EN 418, use a trigger action Emergency stop from the Harmony XB4 range (XB4B8 and XB4BS9). See page 2/6.



Selector switches and key switches

Table with 6 columns: Type of operator, Number and type of positions, Degree of protection, Mounting (mm), Depth below head (mm), Connection, and References. It lists specifications for selector switches with different handle types and key switches.

(2) The symbol indicates key withdrawal position.

Light functions



2

Pilot lights

Type of head		Smooth lens cap			
Degree of protection		IP 66 / Nema 1, 2, 3, 3R, 4, 6, 12 and 13 / Class II			
Mounting (mm)	panel cut-out	Ø 31			
	mounting centres	57.2 x 44.5 (with legend 9001KN2●●), 57.2 x 50.8 (with legend 9001KN3●●)			
Depth below head (mm)		42			
Connection		Screw clamp terminals			
Type of light block		With high luminosity LED (included)			Incandescent BA 9s bulb (included)
References		24 V AC/DC	48 V AC/DC	120 V AC/DC	230 V AC
	green ●	9001KP35LGG9	9001KP36LGG9	9001KP38LGG9	9001KP7G9
	red ●	9001KP35LRR9	9001KP36LRR9	9001KP38LRR9	9001KP7R9
	yellow ●	9001KP35LYA9	9001KP36LYA9	9001KP38LYA9	9001KP7A9



Illuminated pushbuttons, spring return

Type of head		Spring return flush push			
Degree of protection		IP 66 / Nema 1, 2, 3, 3R, 4, 6, 12 and 13 / Class II			
Mounting (mm)	panel cut-out	Ø 31			
	mounting centres	57.2 x 44.5 (with legend 9001KN2●●), 57.2 x 50.8 (with legend 9001KN3●●)			
Depth below head (mm)		42			
Connection		Screw clamp terminals			
Type of light block		With high luminosity LED (included)			Incandescent BA 9s bulb (included)
References		24 V AC/DC	48 V AC/DC	120 V AC/DC	230 V AC
	green ●	C/O 9001K3L35LGGH13	9001K3L36LGGH13	9001K3L38LGGH13	9001K2L7RH13
	red ●	C/O 9001K3L35LRRH13	9001K3L36LRRH13	9001K3L38LRRH13	9001K2L7GH13
	yellow ●	C/O 9001K3L35LYAH13	9001K3L36LYAH13	9001K3L38LYAH13	9001K2L7AH13



Illuminated Ø 41 mushroom head pushbuttons, latching, high luminosity LED

Degree of protection		IP 66 / Nema 1, 2, 3, 3R, 4, 6, 12 and 13 / Class II			
Mounting (mm)	panel cut-out	Ø 31			
	mounting centres	57.2 x 44.5 (with legend 9001KN2●●), 57.2 x 50.8 (with legend 9001KN3●●)			
Depth below head (mm)		42			
Connection		Screw clamp terminals			
Type of light block		With high luminosity LED (included)			Incandescent BA 9s bulb (included)
Type of head		24 V AC/DC	48 V AC/DC	120 V AC/DC	230 V AC/DC
		2 position, push-pull			
	red ●	C/O 9001KR9P35RH13	9001KR9P36RH13	9001KR9P38RH13	9001KR9P7RH13
		3 position, push-pull (pull: spring return, centre: stay put, push: spring return)			
Type of head					
	red ●	N/C + N/C late break 9001KR8P35RH25	9001KR8P36RH25	9001KR8P38RH25	9001KR8P7RH25



Pushbuttons, spring return

Type of push		Flush	Projecting	Projecting (high guard)	
Colour of push		Multi-colour (set of 7 clip-in coloured caps)			
Degree of protection		IP 66 / Nema 1, 2, 3, 3R, 4, 4X, 12 and 13 / Class II			
Mounting (mm)	panel cut-out	Ø 31			
	mounting centres	57.2 x 44.5 (with legend 9001KN2●●), 57.2 x 50.8 (with legend 9001KN3●●)			
Depth below head (mm)		42			
Connection		Screw clamp terminals			
References		C/O	9001SKR1UH13	9001SKR3UH13	9001SKR2UH13
		N/O	9001SKR1UH5	9001SKR3UH5	9001SKR2UH5



Selector switches

Type of operator		Long black handle			
	positions	3 - spring return	2 - stay put	2 - spring return	3 - stay put
Number and type of positions					
Degree of protection		IP 66 / Nema 1, 2, 3, 3R, 4, 4X, 12 and 13 / Class II			
Mounting (mm)	panel cut-out	Ø 31			
	mounting centres	57.2 x 44.5 (with legend 9001KN2●●), 57.2 x 50.8 (with legend 9001KN3●●)			
Depth below head (mm)		42			
Connection		Screw clamp terminals			
References	N/O	–	9001SKS11FBH5	9001SKS34FBH5	–
	C/O	9001SKS53FBH1	–	–	9001SKS43FBH1



Pilot lights

Type of head		Smooth lens cap			
Degree of protection		IP 66 / Nema 1, 2, 3, 3R, 4, 4X, 12 and 13 / Class II			
Mounting (mm)	panel cut-out	Ø 31			
	mounting centres	57.2 x 44.5 (with legend 9001KN2●●), 57.2 x 50.8 (with legend 9001KN3●●)			
Depth below head (mm)		42			
Connection		Screw clamp terminals			
Type of light block		With high luminosity LED (included)			Incandescent BA 9s bulb (included)
		24 V AC/DC	48 V AC/DC	120 V AC/DC	230 V AC
References	green	9001SKP35LGG9	9001SKP36LGG9	9001SKP38LGG9	9001SKP7G9
	red	9001SKP35LRR9	9001SKP36LRR9	9001SKP38LRR9	9001SKP7R9
	yellow	9001SKP35LYA9	9001SKP36LYA9	9001SKP38LYA9	9001SKP7A9

Accessories



2

Contact blocks with protected terminals

Type of contact	Single contact blocks	
Connection	Screw clamp terminals	
References	C/O	9001KA1
	N/O	9001KA2
	N/C	9001KA3
	C/O, late break	9001KA4
	N/C, late break	9001KA5
	N/O, early make	9001KA6



Enclosures

Type	Number of Ø 30 mm cut-outs	NEMA ratings	Reference
Aluminium	1	1, 3, 4, 6, 12, 13	9001KY1
	2	1, 3, 4, 6, 12, 13	9001KY2
	3	1, 3, 4, 6, 12, 13	9001KY3
	4	1, 3, 4, 6, 12, 13	9001KY4
Stainless steel	1	1, 3, 4, 4X, 13	9001KYSS1
	2	1, 3, 4, 4X, 13	9001KYSS2
	3	1, 3, 4, 4X, 13	9001KYSS3

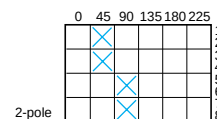


Legends

Type	Colour of legend	Aluminium, size 44 x 43 mm black background	Plastic, size 57 x 57 mm white background
Marking	Blank	9001KN200	9001KN100WP
	START	9001KN201	9001KN101WP
	STOP (red background)	9001KN202	9001KN102RP
	FORWARD	9001KN206	9001KN106WP
	REVERSE	9001KN207	9001KN107WP
	CLOSE	9001KN208	9001KN108WP
	OPEN	9001KN209	9001KN109WP
	DOWN	9001KN210	9001KN110WP
	UP	9001KN211	9001KN111WP
	HIGH	9001KN214	9001KN114WP
	LOW	9001KN215	9001KN115WP
	RESET	9001KN223	9001KN123WP
	PULL TO START/ PUSH TO STOP	9001KN379	9001KN179WP



positions (°)

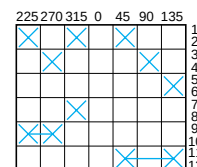
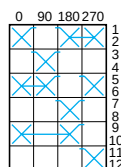
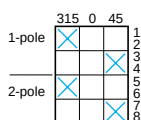


Cam switches, K1 / K2 series

Function	Switches	ON-OFF switches	Stepping switches
	45° switching angle	90° switching angle	with "0" position
Degree of protection front face	IP 65 (1)	IP 65 (1)	IP 65 (1)
Conventional thermal current (Ith)	12 A 20 A	12 A 20 A	12 A 20 A
Rated insulation voltage (Ui) conforming to IEC60947-1	690 V	690 V	690 V
Number of positions	2	2	2 + "0" position
Number of poles	2	2	2
Dimensions of front plate (mm)	45 x 45	45 x 45	45 x 45
Front mounting method	Multifixing plate, 45 x 45 mm	K1B 002ALH K2B 002ALH	K1B 1002HLH K2B 1002HLH
	Plastic mounting plate for Ø 22 mm hole	K1B 002ACH K2B 002ACH	K1B 1002HCH K2B 1002HCH
		K1D 012QLH K2D 012QLH	K1D 012QCH K2D 012QCH



positions (°)



Cam switches, K1 / K2 series

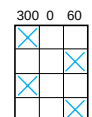
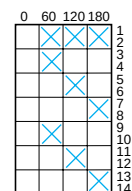
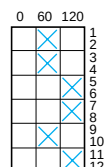
Function	Changeover switches	Ammeter switches	Voltmeter switches
Degree of protection front face	IP 65 (1)	IP 65 (1)	IP 65 (1)
Conventional thermal current (Ith)	12 A 20 A	12 A 20 A	12 A 20 A
Rated insulation voltage (Ui) conforming to IEC60947-1	690 V	690 V	690 V
Number of positions	2 + "0" position	3 + "0" position (3 circuits + "0" position)	6 + "0" position (measurements between 3 phases & N + "0" pos.)
Number of poles	2	4	7
Dimensions of front plate (mm)	45 x 45	45 x 45	45 x 45
Front mounting method	Multifixing plate, 45 x 45 mm	K1D 002ULH K2D 002ULH	K1F 003MLH to be compiled *
	Plastic mounting plate for Ø 22 mm hole	K1D 002UCH K2D 002UCH	K1F 003MCH to be compiled *
		K1F 027MLH to be compiled *	K1F 027MCH to be compiled *

(1) With seal KZ73 for switch with Multifixing plate, with seal KZ65 for Ø 22 mm hole mounting switches. Seal to be ordered separately.

(*) Please consult your Schneider Electric agency.



positions (°)



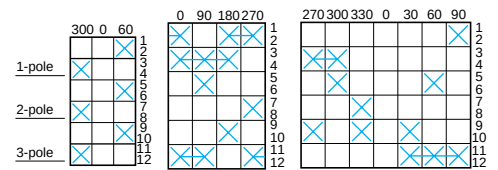
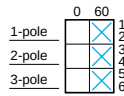
Cam switches with key operated lock, K1 series

Function	Stepping switches	Run switches	Changeover switches + "0" pos.
Degree of protection front face	IP 65	IP 65	IP 65
Conventional thermal current (Ith)	12 A	12 A	12 A
Rated insulation voltage (Ui) conforming to IEC60947-1	690 V	690 V	690 V
Number of positions	2 + "0" position	3 + "0" position	2 + "0" position
Number of poles	3	2	2
Dimensions of front plate (mm)	55 x 100	55 x 100	55 x 100
Colour of handle	red black	red black	red black
	K1F 022QZ2 K1F 022QZ4	K1G 043RZ2 K1G 043RZ4	K1D 002UZ2 K1D 002UZ4
Front mounting method	Ø 22 mm hole + Ø 43.5 mm hole		

10 to 150 A ratings



positions (°)



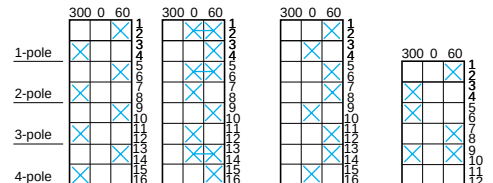
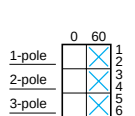
Cam switches, K10 series								
Function	Switches			Changeover switches		Ammeter switches	Voltmeter switches	
	60° switching angle			with "0" position				
Degree of protection front face	IP 65			IP 65		IP 65	IP 65	
Conventional thermal current (Ith)	10 A			10 A		10 A	10 A	
Rated insulation voltage (Ui) conforming to IEC60947-1	440 V			440 V		440 V	440 V	
Number of positions	2			2 + "0" position		3 + "0" pos. (1)	6 + "0" pos. (2)	
Number of poles	1	2	3	2	3	3	3	
Dimensions of front plate (mm)	30 x 30			30 x 30		30 x 30	30 x 30	
Front mounting method By Ø 16 mm or 22 mm hole	K10 A001ACH	K10 B002ACH	K10 C003ACH	K10 D002UCH	K10F003UCH	K10 F003MCH	K10 F027MCH	

(1) (3 circuits + "0" position).

(2) (Measurements between 3 phases and N + "0" position).



positions (°)



Cam switches, K30 series							
Function	Switches	Switches ON-OFF	Changeover with "0" position	Starting star-delta	Starting 2-speed	Reversing	
Degree of protection front face	IP 40	IP 40	IP 40	IP 40	IP 40	IP 40	
Conventional thermal current (Ith)	32 A	32 A	32 A	32 A	32 A	32 A	
Rated insulation voltage (Ui) conforming to IEC60947-1	690 V	690 V	690 V	690 V	690 V	690 V	
Number of positions	2	2	3	3	3	3	
Number of poles	3	3	4	3	3	3	
Dimensions of front plate (mm)	64 x 64	64 x 64	64 x 64	64 x 64	64 x 64	64 x 64	
Front mounting method Multifixing	K30 C003AP ⁽³⁾	K30 C003HP ⁽³⁾	K30 D004HP ⁽³⁾	K30 H004UP ⁽³⁾	K30 H001YP ⁽³⁾	K30 H004PP ⁽³⁾	K30 E003WP ⁽³⁾

(3) To order switches with other thermal current ratings (50, 63, 115, 150 A): replace the number 30 in the reference by 50, 63, 115 or 150 respectively.

Example: a switch with a 32 A current rating, for example K30 C003AP, becomes K50 C003AP for a current rating of 50 A.

Accessories for cam switches K1/K2

Rubber seals			
for IP 65 degree of protection	For use with heads	with 45 x 45 mm front plate Ø 22 mm hole or 4 hole front mtg.	with 60 x 60 mm front plate Ø 22 mm hole or 4 hole front mtg.
References (5)*		KZ 65	KZ 66
			with 45 x 45 mm front plate multifixing
			KZ 73

* sold in lots of

Universal range

High performance and wide choice of units

2

Ø 70 mm



Illuminated beacons XVB L		Steady light signalling		Flashing light signalling	
Light source		Incandescent BA 15d bulb, 10 W max. (not included)	Protected BA 15d LED (included)	Protected BA 15d LED (included)	"Flash" discharge tube 5 J (1)
Degree of protection		IP 66			
Beacon references (2)	12...250 V AC/DC	XVBL3●	—	—	—
	24 V AC/DC	—	XVBL0B●	XVBL1B●	XVBL6B●
	120 V AC	—	XVBL0G●	XVBL1G●	XVBL6G●
	230 V AC	—	XVBL0M●	XVBL1M●	XVBL6M●

Ø 70 mm



Indicator banks XVB C comprising 2 to 5 signalling units (3)		Base units	Steady light signalling		Flashing light signalling	"Flash" light signalling	Audible units (90 db at 1 m)
Light source		—	Incandescent BA 15d bulb, 10 W max. (not included)	Integral protected LED	Integral protected LED	"Flash" discharge tube 5 J (1)	—
Degree of protection		IP 66					
Base unit references	with cover	XVBC21 (4)	—	—	—	—	—
	without cover	XVBC07 (5)	—	—	—	—	—
Lens unit references (2)	12... 230 V AC/DC	—	XVBC3●	—	—	—	—
	24 V AC/DC	—	—	XVBC2B●	XVBC5B●	XVBC6B●	—
	120 V AC	—	—	XVBC2G●	XVBC5G●	XVBC6G●	—
	230 V AC	—	—	XVBC2M●	XVBC5M●	XVBC6M●	—
Audible unit references	12...48 V AC/DC	—	—	—	—	—	XVBC9B
	120...230 V AC	—	—	—	—	—	XVBC9M

(4) For connection on AS-Interface, order base unit XVBC21A (side cable entry) or XVBC21B (bottom cable entry with M12 connector on flying lead).

(5) For indicator banks with "flash" discharge tube unit.

Ø 50 mm



Indicator banks XVP C comprising 2 to 5 signalling units (3), black clamping ring (6)		Base unit	Steady or flashing light signalling	"Flash" light signalling		Audible units (55...85 dB at 1 m)
Light source		—	Incandescent BA 15d bulb, 7 W max. (not included)	"Flash" discharge tube 0.3 J	"Flash" discharge tube 0.6 J	—
Degree of protection		IP 65				
Base unit with cover		XVPC21	—	—	—	—
References (2)	250 V max.	—	XVPC3●	—	—	—
	24 V AC/DC (flash) - 24 V DC (buzzer)	—	—	XVPC6B●	—	XVPC09B
	120 V AC	—	—	—	XVPC6G●	XVPC09G
	230 V AC	—	—	—	XVPC6M●	XVPC09M

(1) To order a lens unit with a 10 J discharge tube, replace the number 6 by 8 in the reference (example: XVBL6B● becomes XVBL8B●).

(2) To obtain the complete reference, replace the ● by the number designating the colour as follows: 3 = green, 4 = red, 5 = orange, 6 = blue, 7 = clear, 8 = yellow.

(3) An indicator bank comprises: 1 base unit + 1 to 5 signalling units maximum.

(6) To order products with a cream clamping ring, add the letter W to the end of the reference (example: base unit + green lens unit: XVPC21W + XVPC33W etc.).

Optimum range
Excellent price/performance ratio



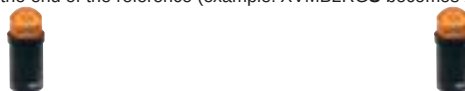
Ø 45 mm

Complete, pre-cabled indicator banks XVM (1)		2 sig. units + integral buzzer (2)		3 signalling units + integral buzzer (2)			
		Steady light signalling		Steady light signalling		Steady light signalling + "flash" (3)	
Light source		Incandescent BA 15d bulb, 5 W max. (included)	BA 15d LED (included)	Incandescent BA 15d bulb, 5 W max. (included)	BA 15d LED (included)	Incandescent BA 15d bulb, 5 W max. (included)	BA 15d LED (included)
Degree of protection		IP 42					
Signalling colours		Red - Green		Red - Orange - Green			
Indicator bank references	24 V AC/DC	XVMB1RGS	XVMB2RGS	XVMB1RAGS	XVMB2RAGS	XVMB1R6AGS	XVMB2R6AGS
	120 V AC/DC (bulb) - 120 V AC (LED)	XVMG1RGS	XVMG2RGS	XVMG1RAGS	XVMG2RAGS	XVMG1R6AGS	XVMG2R6AGS
	230 V AC/DC (bulb) - 230 V AC (LED)	XVMM1RGS	XVMM2RGS	XVMM1RAGS	XVMM2RAGS	XVMM1R6AGS	XVMM2R6AGS

(1) Indicator banks XVM are also available as separate components for customised assembly by the user: please refer to www.telemecanique.com.

(2) To order products without an integral buzzer, delete the letter **S** from the end of the reference (example: XVMB2RGS becomes XVMB2RG).

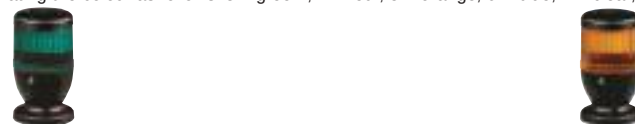
(3) Flash signalling colour: red - 0.8 J.



Ø 45 mm

Miniature illuminated beacons XVDLS		Steady light signalling	"Flash" light signalling
Light source		Incandescent BA 15d bulb, 5 W max. (not included)	"Flash" discharge tube, 0.5 J
Degree of protection		IP 40	
Beacon references (4)	24...230 V AC/DC	XVDLS3●	-
	24 V AC/DC	-	XVDLS6B●
	120 V AC	-	XVDLS6G●
	230 V AC	-	XVDLS6M●

(4) To obtain the complete reference, replace the ● by the number designating the colour as follows: 3 = green, 4 = red, 5 = orange, 6 = blue, 7 = clear, 8 = yellow.



Ø 70 mm

Illuminated beacons XVE L		Steady light signalling		"Flash" light signalling
Light source		Incandescent BA 15d bulb, 5 W max. (not included)	Integral LED	"Flash" discharge tube, 1 J
Degree of protection		IP 42/IP 54 (with sealing kit)		
Beacon references (5)	24... 240 V AC/DC	XVEL3●	-	
	24 V AC/DC	-	XVEL2B●	XVEL6B●
	120 V AC	-	XVEL2G●	XVEL6G●
	230 V AC	-	XVEL2M●	XVEL6M●

(5) To obtain the complete reference, replace the ● by the number designating the colour as follows: 3 = green, 4 = red, 5 = orange, 6 = blue, 7 = clear.



Ø 70 mm

Indicator banks XVE C comprising 2 to 5 signalling units (5)		Base units	Steady light signalling		Flashing light signalling	"Flash" light signalling	Audible units (85 db at 1 m)
Light source		-	Incandescent BA 15d bulb, 5 W max. (not included)	Integral LED	Integral LED	"Flash" discharge tube 1 J	-
Degree of protection		IP 42/IP 54 (with sealing kit)					
Base unit references	IP 42	XVEC21	-	-	-	-	-
	IP 54	XVEC21P	-	-	-	-	-
Lens unit references (6)	24...230 V AC/DC	-	XVEC3●	-			
	24 V AC/DC	-	-	XVEC2B●	XVEC5B●	XVEC6B●	XVEC9B
	120 V AC	-	-	XVEC2G●	XVEC5G●	XVEC6G●	XVEC9G
	230 V AC	-	-	XVEC2M●	XVEC5M●	XVEC6M●	XVEC9M

(6) An indicator bank comprises: 1 base unit + 1 to 5 signalling units.

Application specific range

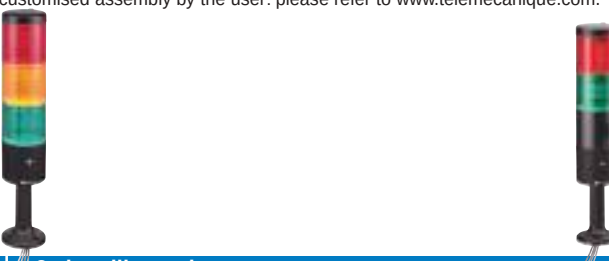
Ready to use for specific requirements



Ø 70 mm

Complete, pre-cabled beacons and indicator banks XVD (1)	1 signalling unit Flash light		2 signalling units Steady light		Steady light + "flash"	"Flash" light + buzzer
Light source	"Flash" discharge tube 5 J		BA 15d LED (included)		BA 15d LED (included) + "Flash" discharge tube, 5 J	"Flash" discharge tube, 5 J + buzzer, 90 db
Degree of protection	IP 40					
Signalling colours	Orange	Red	Green - Red	Orange - Red	Green - Red	Orange
Beacon/Indicator bank references	24 V AC/DC	XVDBA6	XVDBR6	XVDB2GR	XVDB2AR	XVDB2GR6
	230 V AC	XVDMA6	XVDMR6	–	–	–

(1) Indicator banks XVD are also available as separate components for customised assembly by the user: please refer to www.telemecanique.com.



Ø 70 mm

Complete, pre-cabled beacons and indicator banks XVD (1)	3 signalling units Steady light		Steady light + "flash"	Steady light + buzzer
Light source	Incandescent BA 15d bulb, 10 W max. (included)	BA 15d LED (included)	BA 15d LED (included) + "Flash" discharge tube, 5 J	BA 15d LED (included) + buzzer, 90 db
Degree of protection	IP 40			
Signalling colours	Green - Orange - Red		Green - Orange - Red	Green - Red (2)
Indicator bank references	24 V AC/DC	XVDB1GAR	XVDB2GAR	XVDB2SGR
	230 V AC	XVDM1GAR	XVDM2GAR	–

Complete, pre-cabled beacons and indicator banks XVD (2)	4 signalling units Steady light		Steady light + buzzer	
Light source	BA 15d LED (included)		Incandescent BA 15d bulb, 10 W max. (included)	BA 15d LED (included)
Degree of protection	IP 40			
Signalling colours	Clear - Green - Orange - Red		Green - Orange - Red	
Indicator bank references	24 V AC/DC	XVDB2CGAR	XVDB1SGAR	XVDB2SGAR
	230 V AC	–	–	XVDM2SGAR

(1) Beacons and indicator banks XVD are also available as separate components for customised assembly by the user: please refer to www.telemecanique.com.

(2) Also available in 24 V AC/DC with signalling colours Orange - Red: XVDB2SAR.



Rotating mirror beacon XVR and Sirens XVS	Rotating mirror beacon		Sirens, 106 db	
Description	Halogen bulb 70 W H1 (included)	Incandescent bulb 25 W BA 15d (included)	1 tone	2 tone
Diameter	Ø 165 mm		Ø 92 mm	
Degree of protection	IP 65		IP 40	
References (3)	24 V AC/DC	XVR1B9●	XVR1B0●	XVSB1
	120 V AC	–	XVR1G0●	XVSG1
	230 V AC	–	XVR1M0●	XVSM1
				XVSB2
				XVSG2
				XVSM2

(3) To obtain the complete reference, replace the ● by the number designating the colour as follows: 3 = green , 4 = red , 5 = orange, 6 = blue, 8 = yellow.



Bulbs and LEDs		Beacons and indicator banks XVB / XVP (1) / XVD				Rotating mirror beacon XVR	
Light source		Incandescent BA 15d base 7 W	Incandescent BA 15d base 10 W (not XVP)	LED (2) BA 15d base	Flashing LED (2) BA 15d base	Incandescent BA 15d base 25 W	Halogen H1 base 70 W
References	12 V	DL1BEJ	DL1BLJ	–	–	–	–
	24 V	DL1BEB	DL1BLB	DL1BDB●	DL1BKB●	DL1 BRB	DL1 BRBH
	48 V	DL1BEE	DL1BLE	–	–	–	–
	120 V	DL1BEG	DL1BLG	DL1BDG●	DL1BKG●	DL1 BRG	–
	230 V	DL1BEM	DL1BLM	DL1BDM●	DL1BKM●	DL1 BRM	–

(1) Indicator banks XVP can be fitted with 5 W incandescent bulbs: see beacons XVDLS / XVE.

(2) To obtain the complete reference, replace the ● by the number designating the colour as follows: 1 = white, 3 = green, 4 = red, 5 = orange, 6 = blue, 8 = yellow.



Bulbs and LEDs		Beacons XVDLS / XVE	Indicator banks XVM / XVE			
Light source		Incandescent BA 15d base 5 W	Incandescent BA 15d base 5 W	LED (3) BA 15d base	Flashing LED (3) BA 15d base	"Flash" discharge tube, 0.8 Joule BA 15d base
References	24 V	DL1EDBS	DL1EDBS	DL2EDB●	DL1EKB●	DL6BB
	120 V	DL1EDGS	DL1EDGS	DL2EDG●	DL1EKG●	DL6BG
	230 V	DL1EDMS	DL1EDMS	DL2EDM●	DL1EKM●	DL6BM

(3) To obtain the complete reference, replace the ● by the number designating the colour as follows: 1 = white, 3 = green, 4 = red, 6 = blue, 8 = orange.



Mounting accessories		Beacons and indicator banks XVB / XVD / XVE		Indicator banks XVP		Indicator banks XVM		Rotating mirror beacon XVR
Description		Aluminium tube with integral black plastic fixing base	Plastic tube with integral black plastic fixing base	Aluminium tube with integral black plastic fixing base	Aluminium tube with steel fixing bracket	Aluminium tube with integral cream plastic fixing base	Aluminium tube with steel fixing bracket	–
Diameter (mm)		Ø 25	Ø 25	Ø 20	Ø 20	Ø 20	Ø 20	–
Support tubes	60 mm	XVEZ13	–	–	–	–	–	–
	100 mm	–	–	–	XVPC02T	XVMZ02	XVMZ02T	–
	112 mm	–	–	XVPC02 (4)	–	–	–	–
	120 mm	XVBZ02	–	–	–	–	–	–
	140 mm	–	XVDC02	–	–	–	–	–
	250 mm	–	–	–	XVPC03T	XVMZ03	XVMZ03T	–
	260 mm	–	–	XVPC03 (4)	–	–	–	–
	400 mm	–	–	–	XVPC04T	XVMZ04	XVMZ04T	–
	410 mm	–	–	XVPC04 (4)	–	–	–	–
	420 mm	XVBZ03	–	–	–	–	–	–
	820 mm	XVBZ04	–	–	–	–	–	–
Fixing plates, black	for vertical support	XVBC12	–	XVPC12 (4)	–	–	–	XVR012
	for horizontal support	XVBZ01	–	–	–	–	–	XVR013

(4) To order an aluminium support tube with integral cream fixing base, add the letter **W** to the end of the reference (example: XVPC02W).



Type XAC A “Pistol grip”

Degree of protection		IP 65 / Nema 4, 4X / Class II			
Rated operational characteristics		AC 15 (240 V 3 A), DC 13			
Conventional thermal current	Ithe	10 A			
Connection		Screw clamp terminals, 1 x 2.5 mm² or 2 x 1.5 mm²			
For control of		single-speed motors 		2-speed motors 	
Dimensions (mm)	W x H x D	52 x 295 x 71 (x 85 with ZA2 BS44)		52 x 295 x 71 (x 85 with ZA2 BS44)	
Number of operators	mechanically interlocked	2		2	
	Emergency stop	without	ZA2 BS44	without	ZA2 BS44
References		XAC A201	XAC A2013	XAC A207	XAC A2073



Type XAC A

For control of single-speed motors		
Dimensions (mm)	W x H x D	80 x 314 x 70 (x 90 with ZA2 BS44)
Number of operators	mechanically interlocked between pairs	2
	Emergency stop	without ZA2 BS44
References		XAC A271 XAC A2713



For control of single-speed motors		
Dimensions (mm)	W x H x D	80 x 500 x 70 (x 90 with ZA2 BS54)
Number of operators	mechanically interlocked between pairs	6
	Emergency stop	without ZA2 BS54
References		XAC A671 XAC A6713



Stations for user assembly



2

Empty enclosures type XAC A

Number of ways	2	3	4	5	6	8	12
References	XAC A02	XAC A03	XAC A04	XAC A05	XAC A06	XAC A08	XAC A12

Separate components (for mounting in enclosures XAC A)

Booted operators		
white		XAC A9411
black		XAC A9412

Mushroom head, latching (1)		
turn to release	Ø 30	ZA2 BS44
	Ø 40	ZA2 BS54

Mushroom head, latching, trigger action (1)		
turn to release	Ø 30	ZA2 BS834
	Ø 40	ZA2 BS844

Mushroom head, latching (1)		
key release	Ø 30	ZA2 BS74
	Ø 40	ZA2 BS14

Selector switch		
	2 pos. stay put	ZA2 BD2
	3 pos. stay put	ZA2 BD3

Key switch		
key n° 455	2 pos. stay put	ZA2 BG4
	3 pos. stay put	ZA2 BG5

Blanking plug		
with seal and fixing nut		ZB2 SZ3

Pilot light heads		
white		ZA2 BV01
green		ZA2 BV03
red		ZA2 BV04
yellow		ZA2 BV05

Pilot light bodies		
direct supply		ZB2 BV006
direct supply, through resistor		ZB2 BV007

Contact blocks	
Single-speed N/O	ZB2 BE101
Single-speed N/C	ZB2 BE102

Contacts blocks for XAC A941●	
Single-speed N/C + N/O	XEN G1491
2-speed N/C + N/O + N/O	XEN G1191

Contact blocks (for mounting in enclosure base)	
N/O	XAC S101
N/C + N/O	XAC S105

Protective guard (for base mounted units)	
For selector switch or mushroom head pushbutton	XAC A982

Legends, 30 x 40 mm	With symbols conforming to NF E 52-124							With text	
References	ZB2 BY4901	ZB2 BY4903	ZB2 BY4907	ZB2 BY4909	ZB2 BY4913	ZB2 BY4915	ZB2 BY4930	ZB2 BY2303	ZB2 BY2304
								blank	
								white or yellow background	
References	ZB2 BY2904	ZB2 BY2906	ZB2 BY2910	ZB2 BY2912	ZB2 BY2916	ZB2 BY2918	ZB2 BY2931		ZB2 BY4101

(1) The mushroom head Emergency stop pushbuttons conform to standard IEC/EN 60947-5-5 and Machinery Directive 98/37/EC. Trigger action mushroom head Emergency stop pushbuttons conform to standard EN 418.

Magelis

Display units

With matrix screen ⁽¹⁾

2



Type		Compact display units				
Display	Capacity	2 lines, 20 characters	4 lines, 20 characters			
	Type	Back-lit LCD green			Back-lit LCD 3 colours green, orange, red	Back-lit LCD green
Data entry		Via keypad with 8 keys (4 with changeable legends)				
Functions	Representation of variables	Alphanumeric				
Communication	Downloadable protocols	Uni-TE, Modbus				Modbus
Development software		XBTL1001 and XBTL1003 (on Windows 98, 2000 and XP)				
Dimensions W x D x H		132 x 37 x 74 mm			132 x 37 x 74 mm	
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium,	Twido, Nano, TSX Micro, Premium, Quantum, Momentum	Twido, Nano, TSX Micro, Premium, Quantum, Momentum	Motor starter Tesys Model U	
Supply voltage		5 VDC		24 VDC	24 VDC	
References		XBTN200	XBTN400	XBTN410	XBTN401	XBTNU400

(1) Except XBTN200: alphanumeric screen.

With matrix screen



Type		Multilingual display units		
Display	Capacity	8 lines, 40 characters		
	Type	Back-lit LCD, monochrome		
Data entry	Function / service keys	–	4 / 1	– / 5
Functions	Representation of variables	Alphanumeric, bargraph, gauge		
Communication	Downloadable protocols	Multiple (Uni-TE, Modbus, AEG and for Allen Bradley, GE Fanuc, Omron, Siemens PLCs)		
Development software		XBTL1001 and XBTL1003 (on Windows 98, 2000 and XP)		
Dimensions W x D x H		202 x 64.8 x 111.3 mm		
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium, Quantum		
Supply voltage		24 VDC		
Without printer link, without log		XBTHM007010	XBTHM027010	XBTHM017010
With printer link, with log		–	–	XBTHM017110

Terminals

With matrix screen



2

Type		Terminals		
Display	Capacity	4 lines, 20 characters		
	Type	Back-lit LCD green		Back-lit LCD, 3 colours green, orange, red
Data entry		20 keys (12 configurable)		
Functions	Representation of variables	Alphanumeric		
Communication	Downloadable protocols	Uni-TE, Modbus		
Development software		XBTL1001 and XBTL1003 (on Windows 98, 2000 and XP)		
Dimensions W x D x H		137 x 37 x 118 mm		
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium,	Twido, Nano, TSX Micro, Premium, Quantum, Momentum	
Supply voltage		5 VDC		24 VDC
References		XBTR400	XBTR410	XBTR411

With matrix screen



Type		8 line multilingual matrix screen terminals		
Display	Capacity	8 lines, 40 characters		
	Type	Back-lit LCD, monochrome		
Data entry	Function / service keys	12 / 10		
	Numeric / soft function keys	12 / 4		
Functions	Representation of variables	Alphanumeric, bargraph, gauge		
Communication	Downloadable protocols	Multiple (Uni-TE, Modbus, AEG and for Allen Bradley, GE Fanuc, Omron, Siemens PLCs)		
Development software		XBTL1001 and XBTL1003 (on Windows 98, 2000 and XP)		
Dimensions W x D x H		253 x 62.5 x 155 mm		
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium		
Supply voltage		24 VDC		
Without printer link, without log		XBTPM027010		
With printer link, with log		XBTPM027110		



Type		With keypad			With touchscreen	
Display	Screen size	5.7"	10.4"		10.4"	
	Type	TFT, 256 colours			LCD TFT, 256 colours	
Data entry	Soft function keys with LED	8	10		–	
	Static function keys with LED	10 + legends	12 + legends		–	
	Service keys	12	12		–	
	Alphanumeric keys	12 + 3 alphanumeric access			–	
	Touchscreen	no	no	no	yes	
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, potentiometer, selector				
	Recipes	125 records maximum with 5000 values maximum				
	Curves	16				
	Alarm logs	Yes				
Communication	Downloadable protocols	Uni-TE, Modbus, AEG and for Allen Bradley, GE Fanuc, Omron, Siemens PLCs				
	Bus and networks	Fipway, Modbus Plus with PCMCIA card (except XBTF011110)				
Development software		XBT L1003 (on Windows 98, 2000 and XP)				
Dimensions W x D x H		220.3x88x265mm	296x91x332mm	197x92.6x147mm	296x91x222mm	
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium, Quantum				
RJ45 Ethernet TCP/IP connector		no	no	yes	no	yes
Supply voltage		24 VDC				
References		XBTF011110 / F011310	XBTF024510	XBTF024610	XBTF034510	XBTF034610

With 3.8" and 5.7" touchscreen open to NTIC⁽¹⁾



Type		Optimum		
Display	LCD screen size	3.8"		5.7"
	Type	STN monochrome, ambre ou rouge		Back-lit STN monochrome, blue
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, button, light, clock, flashing light, keypad		
	Curves	yes, with log		
	Alarm logs	yes, incorporated		
Communication	Downloadable protocols	Uni-TE, Modbus	Uni-TE, Modbus, Modbus TCP/IP	Uni-TE, Modbus,
	Bus and networks	–	Ethernet, IEEE 802.3 10/100 BASE-T, RJ45	–
Third party protocols		Mitsubishi (Melsec), Omron (Sysmac), Rockwell Automation (Allen Bradley), Siemens (Simatic)		
Development software		Vijeo Designer VJD●●●TGSV43M (on Windows 2000 and XP)		
Dimensions W x D x H		130x41x104mm		167.5x60x135mm
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium, Quantum		
«Compact Flash» card slot		no		
Character fonts		ASCII, Japanese (ANK, Kanji), Chinese (simplified Chinese), Taiwanese (traditional Chinese)		
Built-in Ethernet TCP/IP		no	yes	no
Supply voltage		24 VDC		
References		XBTGT1100	XBTGT1130	XBTGT2110

(1) NTIC: New Technology for Information and Communication

With 5.7" touchscreen open to NTIC⁽¹⁾



2

Type		Multifunction			
Display	LCD screen size	5.7"			
	Type	Back-lit STN, monochrome black and white		STN, colour 64 colours	TFT, colour 256 colours
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, button, light, clock, flashing light, keypad			
	Curves	yes, with log			
	Alarm logs	yes, incorporated			
Communication	Downloadable protocols	Uni-TE, Modbus	Uni-TE, Modbus, Modbus TCP/IP	Uni-TE, Modbus	Uni-TE, Modbus, Modbus TCP/IP
	Bus and networks	–	Ethernet, IEEE 802.3 10 BASE-T, RJ45	–	Ethernet, IEEE 802.3 10 BASE-T, RJ45
	Expansion	For Modbus Plus network connection module			
Third party protocols		Mitsubishi (Melsec), Omron (Sysmac), Rockwell Automation (Allen Bradley), Siemens (Simatic)			
Development software		Vijeo Designer VJD●●●TGSV43M (on Windows 2000 and XP)			
Dimensions W x D x H		167.5x60x135mm			
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium, Quantum			
«Compact Flash» card slot		yes			
Character fonts		ASCII, Japanese (ANK, Kanji), Chinese (simplified Chinese), Taiwanese (traditional Chinese)			
Built-in Ethernet TCP/IP		no	yes	no	yes
Supply voltage		24 VDC			
References		XBTGT2120	XBTGT2130	XBTGT2220	XBTGT2330

With 7.4", 10.4", 12.1" touchscreen open to NTIC⁽¹⁾



Type		Multifunction			
Display	LCD screen size	7.4"	10.4"	10.4"	12.1"
	Type	TFT, colour 256 colours	STN, colour 64 colours	TFT, colour 256 colours	TFT, colour 256 colours
Functions	Representation of variables	Alphanumeric, bitmap, bargraph, gauge, button, light, clock, flashing light, keypad			
	Curves	yes, with log		yes, with log	
	Alarm logs	yes, incorporated		yes, incorporated	
Communication	Downloadable protocols	Uni-TE, Modbus	Uni-TE, Modbus, Modbus TCP/IP	Uni-TE, Modbus, Modbus TCP/IP	Uni-TE, Modbus, Modbus TCP/IP
	Bus and networks	–	Ethernet, IEEE 802.3 10 BASE-T, RJ 45		
	Expansion	For Modbus Plus network connection module			
Third party protocols		Mitsubishi (Melsec), Omron (Sysmac), Rockwell Automation (Allen Bradley), Siemens (Simatic)			
Development software		Vijeo Designer VJD●●●TGSV43M (on Windows 2000 and XP)			
Dimensions W x D x H		215 x 60 x 170 mm		317 x 58 x 243 mm	
Compatibility with PLCs		Twido, Nano, TSX Micro, Premium, Quantum			
«Compact Flash» card slot		yes	yes	yes	yes
Character fonts		ASCII, Japanese (ANK, Kanji), Chinese (simplified Chinese), Taiwanese (traditional Chinese)			
Built-in Ethernet TCP/IP		no	yes	yes	yes
Supply voltage		24 VDC	24 VDC	24 VDC	24 VDC
References		XBTG4320	XBTG4330	XBTG5230	XBTG5330
		XBTG6330			

(1) NTIC: New Technology for Information and Communication

Magelis

Accessories

For display units and terminals

2



Connection cables	PC to Magelis transfer cables				
	2.5 m	2.5 m	2 m	2 m	2 m
Application	PC to all XBTN200, N400 and R400	PC to all XBT except XBTN200, N400, R400 and XBTG	PC to XBTG / XBTGT1000		PC to XBTGT2000
Type of connector	RJ45/MiniDin + SUB D 9	SUB D 9/SUB D 25	SUB D 9/MiniDin	USB/MiniDin	USB/USB
Physical link	RS 232C	RS 232C	TTL	TTL	
References	XBTZ945 (1)	XBTZ915 (1)	XBTZG915	XBTZG925	XBTZG935

(1) Adaptor **SR2CBL06** for linking USB port of PC, to be used in conjunction with connecting cables XBTZ945 and XBTZ915 for connecting display units or terminals XBTN/R/H/P/E/HM/PM/F.

Connection cables	Telemecanique PLC connection cables (2.5 m)			
Application	XBTGT, XBTN200, N400, R400, NU400 to: Twido, Nano, TSX Micro, Premium	All XBT except XBTGT, XBTN200, N400, R400, NU400 to: Twido, Nano, TSX Micro, Premium	Quantum	Momentum (port 1)
Type of connector	RJ45 / MiniDin	MiniDin / SUB D 25	SUB D 9 / SUB D 25	RJ45 / SUB D 25
Physical link	RS 485	RS 485	RS 232	RS 232
References	XBTZ9780	XBTZ968	XBTZ9710	XBTZ9711



Network cards	PCMCIA type III card		Module
Compatibility	XBTF	XBTF	XBTG
Protocol	Modbus Plus	Fipway	Modbus Plus
References	TSXMBP100	TSXFPP20	XBTZGMBP



Memory cards	PCMCIA type II card	«Compact Flash» card		
Compatibility	XBTF	XBTG / XBTGT (except XBTGT2110)		
Capacity	16 Mb	128 Mb	256 Mb	512 Mb
References	XBTMEM16	XBTZGM128	XBTZGM256	MPCYN00CFE00N



Type		i PC Smart	i PC Compact	
Display	Size	15" active matrix XGA (1024 x 768)		
	Type	TFT colour LCD (262,144 colours)		
Data entry		Via touchscreen	Via touchscreen	
Processor	Type	VIA	VIA	Intel Pentium 4 Mobile
	Frequency	667 MHz	667 MHz	1.7 GHz
Internal hard disk		–	≥ 20 Gb IDE, 2"1/2	
RAM memory		256 Mb expandable up to 512 Mb	256 Mb expandable up to 512 Mb (1 memory slot max.)	
CD-ROM drive		–	Yes, 24 x	
Expansion slots		2 PCMCIA slots	1 PCI bus slot, 2 PCMCIA slots,	
		–	1 Compact Flash slot	
Ethernet TCP/IP network		1 x 10 BASE-T/100BASE-TX (RJ45)		
Operating system		Windows XPe integrated	Windows 2000 pre-installed and Windows XP Pro	
Input/Output ports		2 x USB, 1 x COM1, 1 x COM2, 1 x LPT1 (parallel), 1 x PS/2 keyboard	2 x USB, 1 x COM1, 1 x COM2, 1 x COM3 1 x LPT1 (parallel), 1 x PS/2 keyboard and 1 x PS/2 mouse	
	on front panel	–	1 x USB	
Fixing		Fixings included with each product for mounting on panel or enclosure door		
Dimensions W x D x H		395 x 62 x 294 mm	395 x 100 x 294 mm	
Supply voltage		24 VDC	115...230 VAC	
References	Windows XPe integrated	MPCST52NDJ00T	–	–
	Windows 2000	–	MPCKT52NAA00N	MPCKT55NAA00N
	Windows XP Pro	–	MPCKT52NAX00N	MPCKT55NAX00N

Combined offers (bundle pack)

Magelis iPC Compact industrial PCs can be supplied with software packages.
Characteristics identical to standard industrial PCs shown above.

Type		i PC Compact		
Processor	Type	VIA	Intel Pentium 4M	
Applications		Vijeo Look	Vijeo Look	
Pre-installed software		Vijeo Look 2.6 RT1024	Vijeo Look 2.6 RT1024	Vijeo Look 2.6 BT1024
References	Windows 2000	MPCKT52NAA00A	MPCKT55NAA00A	MPCKT55NAA00B
	Windows XP Pro	MPCKT52NAX00A	MPCKT55NAX00A	MPCKT55NAX00B

Accessories

«Compact Flash» card	
Capacity	512 Mb (empty) for iPC Smart or iPC Compact
Reference	MPCYN00CFE00N

RAM memory expansion		
Capacity	512 Mb SO DIMM for VIA	512 Mb SO DIMM for Pentium 4 Mobile
References	MPCYK02RAM512	MPCYK05RAM512



Central unit Control box type		102		402	
Processor	Type	Intel Celeron M	Intel Pentium M	Intel Celeron M	Intel Pentium M
	Frequency	1,3 GHz	1,6 GHz	1,3 GHz	1,6 GHz
Internal hard disk		≥ 40 Gb IDE, 2"1/2			
RAM memory		512 Mb SDRAM expandable up to 2 Gb (2 memory slots max.)			
CD-ROM drive		Yes, removable 24 x and Combo CD-RW option			
Expansion slots		3 slots (1 PCI bus and 2 PCMCIA bus)		6 slots (4 PCI bus and 2 PCMCIA bus)	
Ethernet TCP/IP network		1 x 10 BASE-T/100 BASE-TX (RJ45)			
Bus and networks		With additional card on ISA or PCI bus: Modbus/Uni-TE/Fipio bus, Modbus Plus/Fipway networks, INTERBUS-S/Profibus DP/CANopen Third party bus			
Video card	built-in	Controller built-in Intel chipset			
Operating system		Windows 2000 or Windows XP Pro pre-installed			
Input/Output ports		2 x USB, 1 x COM1, 1 x COM4 and 1 x LTP1 (parallel) 1 x external VGA video screen, 1 x PS/2 keyboard (1) and 1 x PS/2 pointing device (1)			
Associated product		1 front panel screen or as a stand-alone (2)			
Fixing		Fixings included with each screen for mounting on panel or enclosure door			
Dimensions W x D x H		310 x 310 x 110 mm		310 x 310 x 200 mm	
115...230 VAC supply voltage	Windows 2000	MPCEN02NAA00N	MPCEN05NAA00N	MPCDN02NAA00N	MPCDN05NAA00N
	Windows XP Pro	MPCEN02NAX00N	MPCEN05NAX00N	MPCDN02NAX00N	MPCDN05NAX00N
24 VDC supply voltage	Windows 2000	MPCEN02NDA00N	MPCEN05NDA00N	MPCDN02NDA00N	MPCDN05NDA00N
	Windows XP Pro	MPCEN02NDX00N	MPCEN05NDX00N	MPCDN02NDX00N	MPCDN05NDX00N

(1) Port not operational when the central unit Control box is used with the front panel screen.

(2) To use the Control box without a front panel screen, mounting panel **MPCNP00NNN00N** is required.

Combined offers (bundle pack)

Magelis iPC central unit Control boxes (115...230 VAC supply) can be supplied with software packages.

Operating system Windows XP Pro

Characteristics identical to standard Control box units shown above.

Central unit Control box type		102	402
Processor	Type	Intel Celeron M, 1.3 GHz	Intel Pentium M, 1.6 GHz
Pre-installed software	Pack A "Monitoring RT"	Vijeo Look supervision, 1024 I/O "Run Time"	Vijeo Look supervision, 1024 I/O "Run Time"
	Pack B "Monitoring BT/RT"	–	Vijeo Look supervision, 1024 I/O "Build Time/Run Time"
Pack A, 115...230 VAC supply voltage		MPCEN02NAX00A	MPCDN05NAX00A
Pack B, 115...230 VAC supply voltage		–	MPCDN05NAX00B

Modular Industrial PCs

iPC Modular range



2

Type		15" front panel screen		
Display	Size	15" active matrix XGA (1024 x 768)		
	Type	Back-lit active matrix TFT colour LCD (262,144 colours)		
Data entry		Via keyboard	Via keyboard and touchscreen	Via touchscreen
	Keyboard	70 standard IBM keys + 2 x 10 user function keys	–	–
Dimensions W x D x H		480 x 52.7 x 370 mm	480 x 52.7 x 370 mm	460 x 52.7 x 340 mm
Input/Output ports on front panel		1 x IrDA infrared and 1 x PS/2 keyboard/mouse		
Associated product		1 central unit Control box or 1 central unit Control box pack (combined offer)		
Fixing		Fixings included with each screen for mounting on panel or enclosure door		
Supply voltage		From Control box unit		
References		MPCNA50NNN20N	MPCNB50NNN20N	MPCNT50NNN20N

i Display external screen



Separate components				
External LCD flat screen, flush mounting		12" SVGA (800 x 600)	15" XGA (1024 x 768)	
References	115...230 VAC supply voltage	MPCYS20NAN00N	MPCYS50NAN00N	
	24 VDC supply voltage	MPCYS20NDN00N	MPCYS50NDN00N	

Accessories

Separate components for Control box		
Qwerty PS/2 keyboard, 101 keys		MPCYN00KBD00N
SDRAM memory expansion	512 Mb	1024 Mb
	References	MPCYDERAM0512 MPCYDERAM1024
Option Combo, DVD drive, CD-RW recorder		MPCYN00CDWROM



Type	Configuration software				
Compatibility	All XBT except XBTG / XBTGT		XBTG / XBTGT		
Operating system	Windows 98, 2000 and XP		Windows 2000 and XP		
Version (1)	Light (not for XBTG)	Complete	Single (1 station)	Group (3 stations)	Team (10 stations)
References for PC CD-ROM	XBTL1001M	XBTL1003M (2)	–	–	–
Including PC cable		–	VJDSNDTGSV43M	VJDGNDTGSV43M	VJDTNDTGSV43M
	Serial	–	VJDSSDTGSV43M	VJDGSDTGSV43M	VJDTSDTGSV43M
	USB	–	VJDSUDTGSV43M	VJDGUDTGSV43M	VJDTUDTGSV43M

(1) Demonstration version available, XBTL1001M / L1003M demo: XBTL1003DEMO, Vijeo Designer demo: VJDSPULTUCDV10M.
(2) Update XBTLUP1004.



XBTL1001 / L1003 for Magelis display units and terminals

The XBTL1001/L1003 configuration software can be used to create operator dialogue applications designed for controlling automation systems for:

- all XBTN/R/H/HM display units, XBTP/PM/E terminals with software XBTL1001,
- all XBTN/R/H/HM display units, XBTP/PM/E and F terminals with software XBTL1003.

Applications created using the XBTL1001/L1003 software are independent to the protocol used. The same operator dialogue application can be used with PLCs available from the principal manufacturers.

Configuration

The XBTL1001/L1003 configuration software enables simple creation of various types of pages: application pages (can be interlinked), alarm pages, help pages, recipe pages, etc.

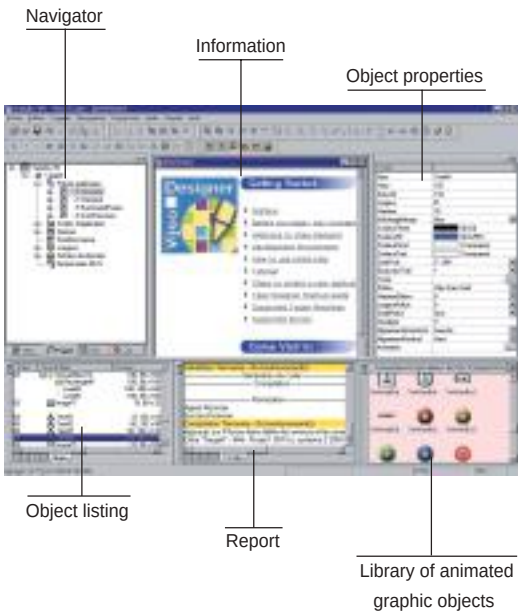
Vijeo Designer for Magelis touchscreen graphic terminals XBTG / XBTGT

The Vijeo Designer configuration software can be used to create operator dialogue applications designed for controlling automation systems for all the Magelis range of New Technology (NTIC) terminals: XBTG / XBTGT.

Configuration

The Vijeo Designer configuration software enables operator dialogue projects to be easily and quickly performed due to advanced ergonomics using 6 configurable windows.

- Vijeo Designer configuration software also offers complete application management tools:
- . Project creation, a project being one or several applications.
 - . Recipe editor (32 groups of 64 recipes of 1024 ingredients max.).
 - . Cross-referencing of application variables.
 - . Application synoptics documentation.
 - . A simulation mode for easy testing of the application from the design office.
 - . Powerful graphics editor for easy creation of synoptics (more than 30 pre-configured animated objects).
 - . Data sharing (up to 300 variables between 8 panels).
 - . Support of 34 languages.
 - . Direct link to PLC symbol files (Unity, PL7, Concept, TwidoSoft, ProWORX, ModSoft).
 - . Upload capabilities: project can be backup on terminal to ease future maintenance.
 - . User's friendly tool to recover data from terminal.





Type		Control software			
Compatibility		All Telemecanique PLCs and Third party PLCs			
Operating system		Windows 2000 and XP			
Input/Output size		Small, 128 I/O	Medium, 512 I/O	Large, 1024 I/O	Extra Large, 2048 I/O
References	Development/execution (BT/RT)	VJLSMDBTSV26M	VJLSMDBTMV26M	VJLSMDBTLV26M	VJLSMDBTXV26M
	Execution (RT)	VJLSMDRTSV26M	VJLSMDRTMV26M	VJLSMDRTLXV26M	VJLSMDRTXV26M

Vijeo Look for industrial PCs



Presentation

Vijeo Look 2.6 is a SCADA (Supervisory Control And Data Acquisition) software package designed for stand-alone stations.

It is based on standardised technologies.

Easy to implement, it offers all the standard functions of a graphic supervision tool.

Vijeo Look is supplied with a pre-configured OFS (OPC Factory Server) Data Server. It is compatible with PCs running Windows 2000 Professional or Windows XP Professional and enables the creation of applications based on all Telemecanique new and old generation PLCs.

- The functions of Vijeo Look control software can be used for:
- . Acquisition of PLC tags.
 - . Visualisation of these tags.
 - . Process supervision and control.
 - . Recording the values of the PLC tags or internal tags of the process in a database.
 - . Embedded software processing.
- The Inputs/Outputs are tags from the OPC Server (or those of the Inputs/Outputs of TSX Micro/Premium PLCs exchanged automatically). They are used for visualisation and embedded processing.

Simple and innovative, Vijeo Look offers optimal solutions.

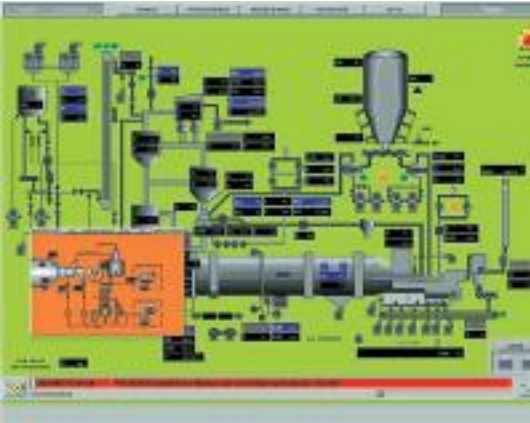
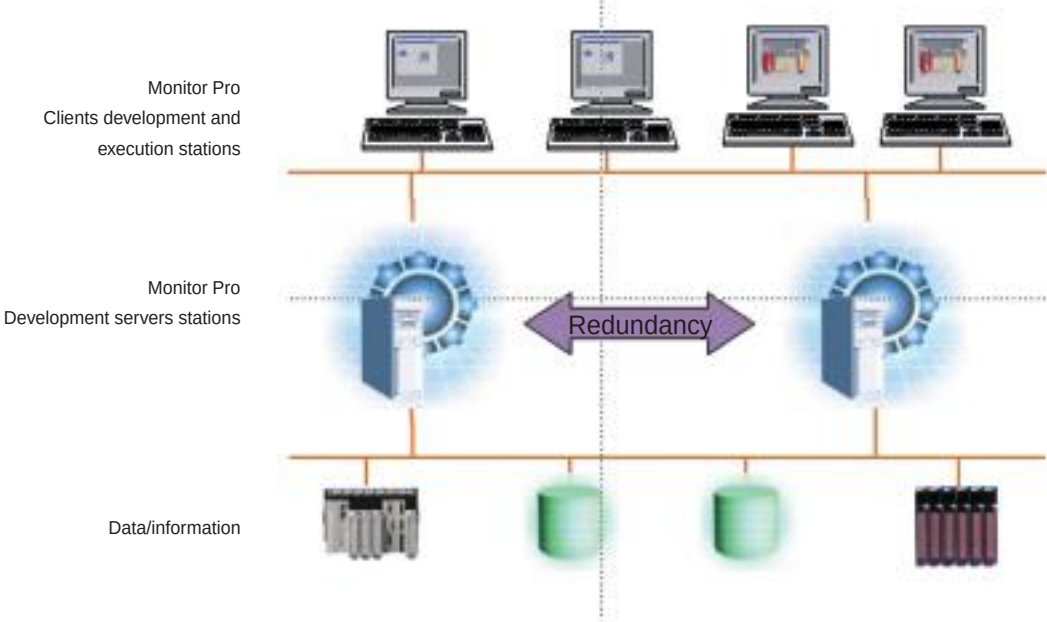
Structure of the offer

- 2 types of software licence are available for Vijeo Look:
- . "Build Time/Run Time" for application development and execution.
 - . "Run Time" for the execution of applications created with a "Build Time"/"Run Time" licence.



Type	Supervision software
Compatibility	All Telemecanique PLCs and other PLCs on the market via communication drivers or using the standard OPC
Operating system	Windows 2000 service Pack 3, Windows XP and Windows server 2003
Input/Output size	11 sizes comprising 300 I/Os to unlimited I/Os (4800 tags to unlimited)
Versions	Development (Build Time/Run Time) and Execution (Run Time)
References for PC CD-ROM	Please contact your Regional Sales Office

Multi-level architecture



Description

Monitor Pro V7.2 is a SCADA (Supervisory Control And Data Acquisition) software solution. Its real-time high performance server offers excellent processing capability, mainly due to the application objects. In addition, its client-server architecture enables it to easily adapt to the topology of your application: multi-server for sharing the processing, multi-user for a wide distribution of information or in redundancy mode for your "high availability" applications.

- **The graphic interface** offers a library of graphic objects. Based on Windows technology, they can easily be customised.
- **The Configuration Explorer**: an intuitive environment for configuration of the real-time data server that also enables object orientated configuration.
- **Relational databases access interface**, supplied with SQL Server 2000. Monitor Pro V7.2 easily enables recording of the production data or access to the stored information. Monitor Pro V7.2 also operates with Oracle, Sybase, Dbase IV and databases supporting the ODBC standard.
- **Improved availability**: Monitor Pro incorporates redundancy services ensuring a high level of architecture availability.
- **Integrated traceability functions**, for real-time monitoring of the quality of your production as well as logging all the actions of the operators.

Monitor Pro V7.2 is the supervision software that adapts to your needs. It offers you real-time monitoring of production and enables you to optimise the operation of your equipment.



Implementation software	FactoryCast	FactoryCast HMI
Compatibility with Telemecanique PLCs	TSX Micro, Premium, Quantum	Premium, Quantum
Operating system	Windows 2000 and XP	
Application	Configuration of FactoryCast modules	Development and implementation of FactoryCast HMI application
References for multilingual PC CD-ROM	Included with FactoryCast modules	TLXCDFCHMIV1M

FactoryCast

Remote "Ready to use" diagnostic functions using simple Internet browser

- Secure access to the diagnostics system and application
- Numerical or graphical display and adjustment of data
- E-mailing
- Open to customisation and creation of Web pages for diagnostics suited to your needs
- Library of animated graphic objects
- SOAP/XML server interface (Web services)

FactoryCast HMI

Identical diagnostic functions as FactoryCast + Core HMI functions embedded in a PLC module:

- Real-time database and acquisition of PLC data (1000 variables)
- Calculations for pre-processing of data
- Advanced alarm management with E-mailing
- Archiving of data in relational databases (SQL, Oracle, MySQL)
- Local Data Logging
- Recipe management
- HTML based Reporting function
- A user customizable Web server for creating an interface fully adapted to your needs
- Library of animated graphic objects
- SOAP/XML client/server interface (Web services)

FactoryCast Gateway

New offer comprising "all in one" Web intelligent gateways integrated in a stand-alone enclosure:

- Communications network interfaces and Modbus or Uni-Telway serial links
- Remote access function, RAS server, Router
- Notification of alarms function by E-mail
- A user customizable Web server for creating an interface fully adapted to your needs
- Library of animated graphic objects
- SOAP/XML client/server interface (Web services)



E-mail



FactoryCast Web server modules



Automation platform		TSX Micro	Premium		Quantum		Modbus	Uni-TE
Data rate		10/100 Mbit/s	10 Mbit/s	10/100 Mbit/s	10/100 Mbit/s		10/100 Mbit/s	10/100 Mbit/s
Ethernet	Modbus TCP/IP Protocol	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Uni-TE TCP/IP Protocol	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Ethway Protocol	—	Yes	—	—	—	—	—
	Serial Protocol	Uni-TE	—	—	—	—	Modbus Master	Uni-Telway slave
	Modem Protocol	PPP, PAP	—	—	—	—	PPP, PAP	PPP, PAP
	Global Data	—	—	Yes	—	Yes	—	—
	I/O Scanning	—	—	Yes	—	Yes	Yes	Yes
Web server	Services gateway/RAS	Yes	—	—	—	—	Yes	Yes
	Standard Web services	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	FactoryCast services	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	FactoryCast HMI services	—	—	—	Yes	—	—	—
SOAP/XML Server	Web services	Yes	—	Yes	Yes	Yes	Yes	Yes
Références		TSXETZ510	TSXETY110WS	TSXETY5103	TSXWMY100	140NOE77111	140NWM10000	TSXETG1000
								TSXETG1010

Ingenious solutions for all your automation system applications

Perfect suitability for all your applications thanks to a complete offer... from simple relays to automation platforms.

Zelio

Relays and Zelio Logic smart relays



Zelio relay range

Zelio Relay plug-in relays, Zelio Control control and measurement relays, Zelio Count counters, Zelio Time timing relays: These ranges offer *compactness* and *simplicity*.

Zelio Logic smart relays

Designed for management of simple automation systems comprising 10 to 40 I/O. Compact or modular, Zelio Logic offers *flexibility* and *simplicity*.

Twido

Programmable controllers



Twido, ideal for simple installations and small machines: standard applications comprising 10 to 100 I/O (max. 252 I/O). Compact or modular, Twido offers *flexibility* and *simplicity*.

Modicon

Automation platforms and distributed I/Os



Modicon TSX Micro, ideal for machine builders. At the heart of the machine, TSX Micro offers *compactness*, *modularity* and *integration* benefits.

- CANopen machine bus connection
- Low cost Ethernet connection
- Doubling of memory capacity



Modicon Premium, ideal for manufacturing applications. Outstanding *flexibility* for distributed architectures and *integration* of advanced automation system functions.

- New high performance processors
- CANopen machine bus connection, from entry level



Modicon Quantum, ideal for process applications. *High level of performance* for process control and architecture availability.

- New high performance processors
- Onboard Ethernet
- Memory expansion option using PCMCIA
- USB connection



Modicon Momentum M1/M1E, ideal for distributed architectures. *Compactness* and *flexibility* for control and I/O distribution on Ethernet.

The essential guide

A simplified selection guide enabling you to quickly select all the products required to develop an automation system... from a small simple machine to a complex installation.

Contents

Relays

- **Zelio Relay** - Plug-in relays 3/2 and 3/3
- **Zelio Analog** - Analog interface 3/4 and 3/5
- **Zelio Control** - Control and measurement relays 3/6
- **Zelio Count** - Counters 3/7
- **Zelio Time** - Timing relays 3/8 and 3/9
- **Zelio Logic** - Smart relays 3/10 and 3/11

Programmable controllers, Automation platforms

- **Twido** - Programmable controllers 3/12 and 3/13
- **Modicon TSX Micro** - Automation platforms 3/14 to 3/19
- **Modicon Premium** - Automation platforms 3/20 to 3/27
- **Modicon Quantum** - Automation platforms 3/28 to 3/35
- **Unity** - Software 3/36 and 3/37
- **PL7, Concept, ProWORKS 32** - Software 3/38 and 3/39

Distributed inputs/outputs

- Distributed inputs/outputs with processor
Modicon Momentum 3/40 to 3/43
- Distributed inputs/outputs **Advantys STB**
(see Chapter 7 "Interfaces and I/Os")

Unity

Taking you into a new world of
automation

*At the heart of the
Telemecanique
offer, Unity is the
new generation
software and
hardware
automation
platform.*

■ **Open**, based on
universal Microsoft
Visio, VBA and XML
software standards,
Unity is designed to
allow your tools to
work together.

■ **Smart**,
Unity provides a
common IEC
development
environment for
Modicon Premium,
Atrium and Quantum
platforms.
With Unity, you can
reduce development
cycles and improve
quality by reusing
standard
programmes.

■ **Flexible**,
the new range of
Modicon Premium,
Atrium and Quantum
processors offers
extended memory
capabilities and
greater execution
performance.



*With Transparent Ready,
Schneider Electric has applied market
standards to its automation system
architectures, making data exchange
even easier. Smart and simple to use,
the Telemecanique software offer
ensures maximum efficiency in terms
of application development and
maintenance, while its high
performance Telemecanique PLCs
help to achieve optimum installation
availability and productivity. Committed
to maximising your investment over the
long-term, Schneider Electric makes it
easy for you to develop your
applications with complete peace of
mind.*



Type of relay			Interface relays RSB			Miniature relays RXM			
Contact characteristics									
Thermal current I _{th} in A (temperature ≤ 55°C)			8	12	16	12	10	6	3
Number of contacts			2 “C/O”	1 “C/O”	1 “C/O”	2 “C/O”	3 “C/O”	4 “C/O”	4 “C/O”
Contact material			AgNi	AgNi	AgNi	AgNi	AgNi	AgNi	AgAu
Switching voltage, min. / max.			5 / 250 VAC/DC			12 / 250 VAC/DC			
Switching capacity, min. / max. (mA / VA)			5 / 2000	5 / 3000	5 / 4000	10 / 3000	10 / 2500	10 / 1500	2 / 1500
Coil characteristics									
Average consumption, inrush,			0.75 VA / 0.45 W			1.2 VA / 0.9 W			
Permissible voltage variation			0.8/0.85...1.1 Un (50 / 60Hz or =)			0.8...1.1 Un (50 / 60Hz or =)			
References			(1)	(1)	(1)	(2)	(2)	(2)	
Coil supply voltage on DC	6 VDC	RSB2A080RD	RSB1A120RD	RSB1A160RD	–	–	–	–	
	12 VDC	RSB2A080JD	RSB1A120JD	RSB1A160JD	RXM2AB2JD	RXM3AB2JD	RXM4AB2JD	RXM4GB2JD	
	24 VDC	RSB2A080BD	RSB1A120BD	RSB1A160BD	RXM2AB2BD	RXM3AB2BD	RXM4AB2BD	RXM4GB2BD	
	48 VDC	RSB2A080ED	RSB1A120ED	RSB1A160ED	RXM2AB2ED	RXM3AB2ED	RXM4AB2ED	RXM4GB2ED	
	60 VDC	RSB2A080ND	RSB1A120ND	RSB1A160ND	–	–	–	–	
	110 VDC	RSB2A080FD	RSB1A120FD	RSB1A160FD	RXM2AB2FD	RXM3AB2ED	RXM4AB2ED	RXM4GB2ED	
Coil supply voltage on AC	24 VAC	RSB2A080B7	RSB1A120B7	RSB1A160B7	RXM2AB2B7	RXM3AB2B7	RXM4AB2B7	RXM4GB2B7	
	48 VAC	RSB2A080E7	RSB1A120E7	RSB1A160E7	RXM2AB2E7	RXM3AB2E7	RXM4AB2E7	RXM4GB2E7	
	120 VAC	RSB2A080F7	RSB1A120F7	RSB1A160F7	RXM2AB2F7	RXM3AB2F7	RXM4AB2F7	RXM4GB2F7	
	220 VAC	RSB2A080M7	RSB1A120M7	RSB1A160M7	–	–	–	–	
	230 VAC	RSB2A080P7	RSB1A120P7	RSB1A160P7	RXM2AB2P7	RXM3AB2P7	RXM4AB2P7	RXM4GB2P7	
	240 VAC	RSB2A080U7	RSB1A120U7	RSB1A160U7	–	–	–	RXM4GB2U7	

Sockets for relays

Type of socket			For interface relays RSB			For miniature relays RXM			
Mixed input/output type sockets with location for protection module									
			–	–	–	RXZE2M114(5)	–	RXZE2M114	RXZE2M114
			–	–	–	RXZE2M114M(5)	–	RXZE2M114M	RXZE2M114M
Separate input/output type sockets with location for protection module									
			RSZE1S48M	RSZE1S35M	RSZE1S48M(3)	RXZE2S108M	RXZE2S111M	RXZE2S114M	RXZE2S114M
Protection modules									
	Diode	6...230 VDC	RZM040W			RXM040W			
	RC circuit	24...60 VAC	RZM041BN7			RXM041BN7			
	Varistor	110...240 VAC	RZM041FU7			RXM041FU7			
		6...24 VDC or AC	RZM021RB (6)			RXM021RB			
		24...60 VDC or AC	RZM021BN (6)			RXM021BN			
		110...230 VDC or AC	RZM021FP (6)			RXM021FP			
		24 VDC or AC	–			–			
		240 VDC or AC	–			–			
		Multifunction timer module	24...230 VDC or AC	–			–		
Accessories									
Plastic maintaining clamp			RSZR215			RXZR335			
Metal maintaining clamp			–			RXZ400			
Label for socket			RSZL300			RXZL420 (except RXZE2M114)			
Bus jumper		2 poles	–			RXZS2			
DIN rail adapter			–			RXZE2DA			
Panel mounting adapter			–			RXZE2FA			

(1) References for relays without socket, for relays with socket, add the letter **S** to the end of the selected reference. (Example: RSB2A080B7 becomes RSB2A080B7S).

(2) References for relays with LED, for relays without LED, replace the number 1 in the reference by **2**. (Example: RXM2AB2JD becomes RXM2AB1JD)

(3) To use RSB 1A160 ●● relay with socket, terminals must be interconnected

Universal and power relays



Universal relays RUM						Power relays RPM				RPF	
Cylindrics			Faston								
10	10	3	10	10		15	15	15	15	30 (4)	30 (4)
2 "C/O"	3 "C/O"	3 "C/O"	2 "C/O"	3 "C/O"		1 "C/O"	2 "C/O"	3 "C/O"	4 "C/O"	2 "N/O"	2 "C/O"
AgNi	AgNi	AgAu	AgNi	AgNi		AgNi	AgNi	AgNi	AgNi	AgSnO ₂	AgSnO ₂
12 / 250 VAC/DC						12 / 250 VAC/DC				12 / 250 VAC/DC	
10 / 2500	10 / 2500	3 / 750	10 / 2500	10 / 2500		100 / 3750	100 / 3750	100 / 3750	100 / 3750	100 / 7200	100 / 7200
2...3 VA / 1.4 W						0.9 VA / 0.7 W	1.2 VA / 0.9 W	1.5 VA / 1.7 W	1.5 VA / 2 W	4 VA / 1.7 W	
(2)	(2)	–	(2)	(2)		(2)	(2)	(2)	(2)	–	–
–	–	–	–	–		–	–	–	–	–	–
RUMC2AB2JD	RUMC3AB2JD	–	RUMF2AB2JD	RUMF3AB2JD		RPM12JD	RPM22JD	RPM32JD	RPM42JD	RPF2AJD	RPF2BJD
RUMC2AB2BD	RUMC3AB2BD	RUMC3GB2BD	RUMF2AB2BD	RUMF3AB2BD		RPM12BD	RPM22BD	RPM32BD	RPM42BD	RPF2ABD	RPF2BBD
RUMC2AB2ED	RUMC3AB2ED	RUMC3GB2ED	RUMF2AB2ED	RUMF3AB2ED		RPM12ED	RPM22ED	RPM32ED	RPM42ED	–	–
–	–	–	–	–		–	–	–	–	–	–
RUMC2AB2FD	RUMC3AB2FD	–	RUMF2AB2FD	RUMF3AB2FD		RPM12FD	RPM22FD	RPM32FD	RPM42FD	RPF2AFD	RPF2BFD
RUMC2AB2B7	RUMC3AB2B7	RUMC3GB2B7	RUMF2AB2B7	RUMF3AB2B7		RPM12B7	RPM22B7	RPM32B7	RPM42B7	RPF2AB7	RPF2BB7
RUMC2AB2E7	RUMC3AB2E7	RUMC3GB2E7	RUMF2AB2E7	RUMF3AB2E7		RPM12E7	RPM22E7	RPM32E7	RPM42E7	–	–
RUMC2AB2F7	RUMC3AB2F7	RUMC3GB2F7	RUMF2AB2F7	RUMF3AB2F7		RPM12F7	RPM22F7	RPM32F7	RPM42F7	RPF2AF7	RPF2BF7
–	–	–	–	–		–	–	–	–	–	–
RUMC2AB2P7	RUMC3AB2P7	RUMC3GB2P7	RUMF2AB2P7	RUMF3AB2P7		RPM12P7	RPM22P7	RPM32P7	RPM42P7	RPF2AP7	RPF2BP7
–	–	–	–	–		–	–	–	–	–	–

	For universal relays RUM					For power relays RPM				For power relays RPF
	RUZC2M	RUZC3M	RUZC3M	–	–	RPZF1	RPZF2	RPZF3	RPZF4	–
	–	–	–	–	–	–	–	–	–	–
	RUZSC2M	RUZSC3M	RUZSC3M	RUZSF3M	RUZSF3M	–	–	–	–	–
	RUW240BD – RUW241P7 – – – – RUW242B7 RUW242P7 RUW101MW					1 and 2 poles		3 and 4 poles		– – – – – – – – –
						RXM040W		RUW240BD		
						RXM041BN7		–		
						RXM041FU7		RUW241P7		
						RXM021RB		–		
						RXM021BN		–		
						RXM021FP		–		
						RUW242B7		–		
						–		RUW242P7		
						–		RUW101MW		
	–					–				–
	RUZC200					RPZF1 (for 1 pole relays)				–
	RUZL420					–				–
	RUZS2					–				–
	–					RPZ1DA	RXZE2DA	RPZ3DA	RPZ4DA	–
	–					RPZ1FA	RXZE2FA	RPZ3FA	RPZ4FA	–

(4) 30A with 13 mm space between relays; 25 A when relay mounting side by side

(5) Max 10 A operating

(6) With LED

Zelio Analog

Analogue Interface
Universal Thermocouple



3	Type	Thermocouple				
	Temperature range	0...150 °C 32...302 °F	0...300 °C 32...572 °F	0...600 °C 32...1112 °F	0...600 °C 32...1112 °F	0...1200 °C 32...2192 °F
	Output range	0...10 V / 0...20 mA - 4...20 mA Switchable				
	Dimensions H x W x D	80 x 22,5 x 80 mm				
	Voltage	24 VDC - Non isolated				
	References	RMTJ40BD	RMTJ60BD	RMTJ80BD	RMTK80BD	RMTK90BD

Universal PT 100



Type	PT 100				
Temperature range	-40...40 °C -40...104 °F	-100...100 °C -148...212 °F	0...100 °C 32...212 °F	0...250 °C 32...482 °F	0...500 °C 32...932 °F
Output range	0...10 V / 0...20 mA - 4...20 mA Switchable				
Dimensions H x W x D	80 x 22,5 x 80 mm				
Voltage	24 VDC - Non isolated				
References	RMPT10BD	RMPT20BD	RMPT30BD	RMPT50BD	RMPT70BD



Optimum PT 100



Type	PT 100				
Temperature range	-40...40 °C	-100...100 °C	0...100 °C	0...250 °C	0...500 °C
	-40...104 °F	-148...212 °F	32...212 °F	32...482 °F	32...932 °F
Output range	0...10 V				
Dimensions H x W x D	80 x 22,5 x 80 mm				
Voltage	24 VDC - Non isolated				
References	RMPT13BD	RMPT23BD	RMPT33BD	RMPT53BD	RMPT73BD

3

Universal Analog Converter



Type	Analog Converter			
Input range	0...10 V or 4...20 mA	0...10 V / -10...+10 V 0...20 mA 4...20 mA	0...50 V / 0...300 V 0...500 V	0...1,5 A / 0...5 A 0...15 A
	0...10 V or 4...20 mA	0...10 V / -10...+10 V 0...20 mA 4...20 mA Switchable	0...10 V 0...20 mA 4...20 mA Switchable	0...10 V or 0...20 mA ou 4...20 mA
Dimensions H x W x D	80 x 22,5 x 80 mm			80 x 45 x 80 mm
Voltage	24 VDC - Non isolated	24 VDC - Isolated	24 VDC - Non isolated	24 VDC - Non isolated
References	RMCN22BD	RMCL55BD	RMCV60BD	RMCA61BD

Zelio Control

Relays

Control relays for 3-phase supplies



3	Function	Rotational direction and presence of phases					
			+ Undervoltage	+ Over and undervoltage	+ Asymmetry		
	Adjustable time delay	without	without	0.1...10 s	0.1...10 s	fixed, 0.5 s	0.1...10 s
	Supply voltage	220...440V	380...440V	400V	380...440V	380...440V	380...440V
	Output	2 C/O	2 C/O	2 C/O	2 C/O	1 C/O	2 C/O
	References	RM4TG20	RM4TU02	RM4TR34 (1)	RM4TR32 (2)	RM4TA02	RM4TA32

- (1) Relay with fixed voltage thresholds.
- (2) Relay with adjustable voltage thresholds.

Current and voltage measurement relays

(3) Basic reference. To be completed with the letters indicating the required voltage, as shown below:

Voltage	VAC, 50/60 Hz	VDC
24...240 V	MW	MW
110...130 V	F	—
220...240 V	M	—
380...415 V	Q	—



Function	Detection of over and undercurrent					
	over and undercurrent		over and undercurrent			
Measuring range	3...30 mA	0.3...1.5 A	0.05 ...0.5 V	1...10 V	30...300 V	180...270 V
	10...100 mA	1...5 A	0.3 ...3 V	5...50 V	50...500 V	
	0.1...1 A	3...15 A	0.5...5 V	10...100 V		
Adjustable time delay	0.05...30 s	0.05...30 s	0.05 ...30 s	0.05...30 s	0.05...30 s	0.1...10 s
Output	2 C/O	2 C/O	2 C/O	2 C/O	2 C/O	2 C/O
References	RM4JA31.. (3)	RM4JA32.. (3)	RM4UA31.. (3)	RM4UA32.. (3)	RM4UA33.. (3)	RM4UB35

(4) Basic reference. To be completed with the letters indicating the required voltage, as shown below:

Voltage	RM4-LG01	RM4-LA32	
	VAC, 50/60 Hz	VAC, 50/60 Hz	VDC
24 V	B	B	—
24...240 V	—	MW	MW
110...130 V	F	F	—
220...240 V	M	M	—
380...415 V	Q	Q	—



Control relays	Empty or fill	
Sensitivity scale	5 ... 100 kΩ	0.25 ... 5 kΩ 2.5 ... 50 kΩ 25 ... 500 kΩ
Time delay	without	adjustable, 0.1 to 10 s
Output	1 C/O	2 C/O
References	RM4LG01.. (4)	RM4LA32.. (4)

Liquid level control probe type	Measuring electrode and reference electrode	1 simple stainless steel electrode in PVC protective casing
Mounting	suspended	suspended
Maximum operating temperature	100°C	100°C
References	LA9RM201	RM79696043

Zelio Count

Counters
Totalisers



Display	Mechanical				LCD
Supply voltage	24 VDC				Battery
Number of digits displayed	5	6	6	8	8
Counting frequency	20 Hz	10 Hz	25 Hz	25 Hz	7.5 kHz
Type of zero reset	Manual	Without	Manual	Without	Manual (1)
Front face dimensions, W x H	41.5 x 31 mm	30 x 20 mm	60 x 50 mm	60 x 50 mm	48 x 24 mm
References	XBKT50000U10M	XBKT60000U00M	XBKT60000U10M	XBKT80000U00M	XBKT81030U33E

(1) With electrical interlocking.

Hour counters



Display	Mechanical		LCD
Supply voltage	24 VAC	230 VAC	Battery
Number of digits / display	7 (99,999.99 h)	7 (99,999.99 h)	8 (999,999.99 h)
Supply frequency	50 Hz	50 Hz	Mode: 1/100 hour
Type of zero reset	Without	Without	Manual (1)
Front face dimensions, W x H	48 x 48 mm	48 x 48 mm	48 x 24 mm
References	XBKH70000004M	XBKH70000002M	XBKH81000033E

(1) With electrical interlocking.

Multifunction counters



Display			LCD		LED	
Number of digits displayed			6			
Counting frequency			5 kHz			
Type of reset			Manual, electric and automatic			
Front face dimensions, W x H			48 x 48 mm			
Preselection number			1	2	1	2
References	Supply voltage	24 VDC	XBKP61130G30E	XBKP61230G30E	XBKP62130G30E	XBKP62230G30E
		115 VAC	XBKP61130G31E	XBKP61230G31E	–	–
		230 VAC	XBKP61130G32E	XBKP61230G32E	XBKP62130G32E	XBKP62230G32E

Zelio Time

Timing relays

Modular timers



3

Type of modular timer width 17.5 mm, relay output	On-delay	Multifunction		
External control	no	–	–	–
Supply voltage	24 VDC - 24 ...240 VAC	24 VDC - 24 ...240 VAC		12 ... 240VAC/DC
Timing range	0.1 s...100 h	0.1 s...100 h	0.1 s...10 h	0.1 s...100 h
Output	1 C/O	1 C/O	1 C/O	1 C/O
References	RE11RAMU	RE11RMMU (1)	RE11RMEMU (2)	RE11RMMW (1)

(1) Multifunction: On-delay, Off-delay, Totaliser, Symmetrical flashing, Chronometer, Pulse on energisation, Pulse output, Timing after closing/opening of control contact.

(2) Multifunction: On-delay, Off-delay, Totaliser, Symmetrical flashing, Chronometer, Pulse on energisation.



width 17.5 mm, relay output	flashing	energisation		
External control	–	–	–	–
Supply voltage	24 VDC - 24...240 VAC	24 VDC - 24...240 VAC	24 VDC - 24...240 VAC	24 VDC - 24...240 VAC
Timing range	0.1 s...100 h	0.1 s...100 h	0.1 s...100 h	0.1 s...100 h
Output	1 C/O	1 C/O	1 C/O	1 C/O
References	RE11RLMU	RE11RHMU	RE11RCMU	RE11RBMU



Type of modular timer width 17.5 mm, solid-state output	On-delay	Off-delay	Multifunction (3)
Supply voltage	24...240 VAC/DC	24...240 VAC	24...240 VAC
Timing range	0.1 s...100 h	0.1 s...100 h	0.1 s...100 h
Output	solid-state	solid-state	solid-state
References	RE11LAMW	RE11LCBM	RE11LMBM

(3) Multifunction: On-delay, Off-delay, Totaliser, Symmetrical flashing, Chronometer, Pulse on energisation, Pulse output, Timing after closing/opening of control contact.



Panel-mounted relays	Timer on-delay	Asymmetrical flasher	Multifunction (4)	Multifunction (5)
Power supply	24...240 VAC/DC			
Time range	0,02 s...300 h			
Output	2 relay 5 A			
Reference	RE48ATM12MW	RE48ACV12MW	RE48AMH13MW (6)	RE48AML12MW

(4) Timer on-delay / pulse on energization

(5) Timer on-delay / calibrator / timer off-delay / symmetrical flasher

(6) 1 selectable in instantaneous

Industrial timers



Type of single function relay width 22.5 mm, relay output	On-delay		Off-delay		
External control	no	yes	no	yes	yes
Supply voltage	24 VAC/DC 110...240 VAC	24 VAC/DC 42...48 VAC/DC 110...240 VAC	24...240 VAC/DC	24 VAC/DC 42...48 VAC/DC 110...240 VAC	24 VAC/DC 42...48 VAC/DC 110...240 VAC
Timing range	0.05 s...300 h	0.05 s...300 h	0.05 s...10 mn	0.05 s...300 h	0.05 s...300 h
Output	1 C/O	2 C/O (1)	1 C/O	2 C/O (1)	1 C/O
References	RE7TL11BU	RE7TP13BU	RE7RB11MW	RE7RL13BU	RE7RM11BU

(1) 1 selectable in instantaneous mode.



Type of relay width 22.5 mm, relay output	Single function		Multifunction	
	Asymmetrical flashing	Pulse on energisation	6 functions (2)	8 functions (3)
External control	yes	no	–	–
Supply voltage	24 VAC/DC 42...48 VAC/DC 110...240 VAC	24 VAC/DC 110...240 VAC	24 VAC/DC 42...48 VAC/DC 110...240 VAC	24 VAC/DC 110...240 VAC
Timing range	0.05 s...300 h	0.05 s...300 h	0.05 s...300 h	0.05 s...300 h
Output	1 C/O	1 C/O	1 C/O	2 C/O (4)
References	RE7CV11BU	RE7PE11BU	RE7ML11BU	RE7MY13BU

(2) RE7ML11BU functions: On-delay, Off-delay, Pulse on energisation with start on energisation, Pulse on energisation with start on opening of remote control contact, Flashing with start during the OFF period, Flashing with start during the ON period.

(3) REMY13BU functions: On-delay, Off-delay, Pulse on energisation with start on energisation, Pulse on energisation with start on opening of remote control contact, Flashing with start during the OFF period, Flashing with start during the ON period, Star-delta starting with double On-delay timing, Star-delta starting with contact for switching to star connection.

(4) 1 selectable in instantaneous mode

Miniature plug-in relays, relay output



Functions			
Timing ranges	7 switchable ranges	0.1 s...1 s - 1 s...10 s - 0.1 min...1 min - 1 min...10 min - 0.1 h...1 h - 1 h...10 h - 10 h...100 h	
Relay output		4 timed C/O contacts	2 timed C/O contacts
Rated current		AC 3 A	AC 5 A
Voltages	24 VDC	RE XL4TMBD	RE XL2TMBD
	24 VAC 50/60 Hz	RE XL4TMB7	RE XL2TMB7
	120 VAC 50/60 Hz	RE XL4TMF7	RE XL2TMF7
	230 VAC 50/60 Hz	RE XL4TMP7	RE XL2TMP7

Zelio Logic

Smart relays

Compact, SR2



Compact smart relays		With display, d.c. power supply					
Supply voltage		12 VDC		24 VDC			
Number of inputs/outputs		12	20	10	12	20	20
Number of inputs	Discrete inputs	8	12	6	8	12	12
	including 0-10 V analogue inputs	4	6	-	4	2	6
Number of outputs		4 relay	8 relay	4 relay	4	8 relay	8
Dimensions, W x D x H (mm)		71.2x59.5x107.6	124.6x59.5x107.6	71.2x59.5x107.6		124.6x59.5x107.6	
Clock		yes	yes	no	yes	no	yes
References		SR2B121JD	SR2B201JD	SR2A101BD (1)	SR2B12●BD (2)	SR2A201BD (1)	SR2B20●BD (2)

(1) Programming on smart relay in LADDER language only

(2) Replace the ● by the number 1 to order a smart relay with **relay output** or by 2 for a smart relay with **transistor output** (Example: SR2B121BD)



Compact smart relays		With display, a.c. power supply					
Supply voltage		24 VAC		100...240 VAC			
Number of inputs/outputs		12	20	10	12	20	20
Number of inputs	Discrete inputs	8	12	6	8	12	12
		4 relay	8 relay	4 relay	4 relay	8 relay	8 relay
Dimensions, W x D x H (mm)		71.2x59.5x107.6	124.6x59.5x107.6	71.2x59.5x107.6		124.6x59.5x107.6	
Clock		yes	yes	no	yes	no	yes
References		SR2B121B	SR2B201B	SR2A101FU (1)	SR2B121FU	SR2A201FU (1)	SR2B201FU

(1) Programming on smart relay in LADDER language only



Compact smart relays		Without display and without buttons					
Supply voltage		24 VDC			100...240 VAC		
Number of discrete inputs/sorties		10	12	20	10	12	20
Number of inputs	Discrete inputs	6	8	12	6	8	12
	including 0-10 V analogue inputs	-	4	6	-	-	-
Number of outputs		4 relay	4 relay	8 relay	4 relay	4 relay	8 relay
Dimensions, W x D x H (mm)		71.2x59.5x107.6		124.6x59.5x107.6	71.2x59.5x107.6		124.6x59.5x107.6
Clock		no	yes	yes	no	yes	yes
References		SR2D101BD (1)	SR2E121BD (3)	SR2E201BD (3)	SR2D101FU (1)	SR2E121FU	SR2E201FU

(1) Programming on smart relay in LADDER language only

(3) To order a smart relay for a **24 VAC supply** (no analogue inputs), delete the letter **D** from the end of the reference (**SR2E121B** and **SR2E201B**)

Modular, SR3



Modular smart relays*	With display						
Supply voltage	12 VDC	24 VDC		24 VAC		100...240 VAC	
Number of inputs/outputs	26	10	26	10	26	10	26
Number of inputs	Discrete inputs	16	6	16	6	16	6
	including 0-10 V analogue inputs	6	4	6	—	—	—
Number of outputs	10 relay	4	10	4 relay	10 relay	4 relay	10 relay
Dimensions, W x D x H (mm)	124.6x59.5x107.6	71.2x59.5x107.6	124.6x59.5x107.6	71.2x59.5x107.6	124.6x59.5x107.6	71.2x59.5x107.6	124.6x59.5x107.6
Clock	yes	yes	yes	yes	yes	yes	yes
References	SR3B261JD	SR3B10●BD (1)	SR3B26●BD (1)	SR3B101B	SR3B261B	SR3B101FU	SR3B261FU

* The modular base can be fitted with one I/O extension module. The 24 VDC modular base can be fitted with one communication module and/or one I/O extension module.

(1) Replace the ● by the number 1 to order a smart relay with **relay output** or by 2 for a smart relay with **transistor output** (Example: SR3B101BD)



Extension modules for Zelio Logic SR3B●●●●● (2)		Communication	Discrete Inputs/Outputs			Analogue Inputs/Outputs
Application		MODBUS network	—	—	—	—
Number of inputs/outputs		—	6	10	14	4
Number of inputs	Discrete	—	4	6	8	—
	Analogue (0...10 V, 0...20 mA, PT100)	—	—	—	—	2*
Number of outputs	Relay	—	2 relay	4 relay	6 relay	—
	Analogue (0...10 V)	—	—	—	—	2
Dimensions, W x D x H (mm)		35.5x59.5x107.6	35.5x59.5x107.6	72x59.5x107.6	72x59.5x107.6	35.5x59.5x107.6
References	12 VDC	—	SR3XT61JD	SR3XT101JD	SR3XT141JD	—
	24 VDC	SR3MBU01BD	SR3XT61BD	SR3XT101BD	SR3XT141BD	SR3XT43BD
	24 VAC	—	SR3XT61B	SR3XT101B	SR3XT141B	—
	100...240 VAC	—	SR3XT61FU	SR3XT101FU	SR3XT141FU	—

* max. 1 PT100 input

(2) The power supply of the extension modules is provided via the Zelio Logic modular relays

Zelio Soft software and memory for SR2/SR3

Zelio Soft software and memory	Multilingual programming software	Connecting cables		Back-up memory
Description	PC CD-ROM Windows 98, NT, 2000, XP, ME) (3)	PC Serial to Relay	PC USB to Relay	EEPROM
References	SR2SFT01	SR2CBL01	SR2USB01	SR2MEM02

(3) CD-ROM including Zelio Soft software, an application library, a self-training manual, installation instructions and a user's manual.

Communication interface for SR2/SR3

Interface, modems, Zelio Logic Alarm software	Communication interface	Modems (4)		Alarm management software
Supply voltage	12...24 VDC	12...24 VDC	12...24 VDC	—
Description	—	Analogue modem	GSM modem	PC CD-ROM (Windows 98, NT, 2000, XP)
Dimensions, W x D x H (mm)	72x59.5x107.6	120.7x42x80.5	111x25.5x54.5	—
References	SR2COM01	SR2MOD01	SR2MOD02	SR2SFT02

(4) Must be used in conjunction with communication interface SR2COM01



Type of base		Compact			
Number of discrete I/O		10	16	24	40
Number of discrete inputs (24 VDC)		6 sink/source	9 sink/source	14 sink/source	24 sink/source
Number of discrete outputs		4 relay 2 A	7 relay 2 A	10 relay 2 A	14 relay 2 A, 2 N/C 1 A
Types of connection		Non-removable screw terminals			
Possible I/O extension modules		–	–	4	7
Counting		3 x 5 kHz, 1 x 20 kHz			4 x 5 kHz, 2 x 20 kHz
PWM position control		–	–	–	2 x 7 kHz
Serial ports		1 x RS 485	1 x RS 485; as an option: 1 x RS 232C or RS 485		
Protocol		Modbus Master/slave, ASCII, remote I/O			
Dimensions LxDxH		80x70x90 mm	80x70x90 mm	95x70x90 mm	157x70x90 mm
Reference	Supply voltage 100...240 VAC	TWDLCAA10DRF	TWDLCAA16DRF	TWDLCAA24DRF	TWDLCAA40DRF (1)
	Supply voltage 19.2...30 VDC	TWDLCA10DRF	TWDLCA16DRF	TWDLCA24DRF	–
	Real-time clock (as an option)	TWDXCPRTC			
	Display unit (as an option)	TWDXCPODC			

(1) Also available in 40 I/O version with Ethernet : TWDLCAA40DRF becomes TWDLCAE40DRF



Type of base		Modular		
Number of discrete I/O		20		40
Number of discrete inputs (24 VDC)		12 sink/source	12 sink/source	24 sink/source
Number of discrete outputs		8 source transistor 0.3 A	6 relay and 2 source transistor 0.3 A	16 source transistor 0.3 A
Types of connection		HE 10 connector	Removable screw terminals	HE 10 connector
Possible I/O extension modules		4	7	7
Supply voltage		24 VDC		
Integrated Counting		2 x 5 kHz, 2 x 20 kHz		
PLS/PWM position control		2x7 kHz		
Serial ports		1 x RS 485; as an option: 1 x RS 232C or RS485		
Protocol		Modbus Master/slave, ASCII, remote I/O		
Dimensions LxDxH		35.4x70x90 mm	47.5x70x90 mm	47.5x70x90 mm
Reference		TWDLMDA20DTK (2)	TWDLMDA20DRT	TWDLMDA40DTK (2)
	Real-time clock (as an option)	TWDXCPRTC		
	Display unit (as an option)	TWDXCPODM		
	Memory extension (as an option)	–	TWDXCMPFK64	

(2) Also available in the following version: sink transistor outputs (TWDLMDA20DUK and TWDLMDA40DUK)

Accessories

Prewired system for modules with HE10 connectors		For modular bases TWDLMDA20DTK/40DTK	For inputs TWDDI16DK/32DK	For outputs TWDDO16TK/32TK
TwidoFast “preformed” cable	L = 3 m	TWDFCW30M	TWDFCW30K	TWDFCW30K
	L = 5 m	TWDFCW50M	TWDFCW50K	TWDFCW50K
Telefast sub-bases	L = 1 m	TWDFST20DR10	TWDFST16D10	TWDFST16DR10
	L = 2 m	TWDFST20DR20	TWDFST16D20	TWDFST16DR20

Memory cartridge and software	Memory cartridge	TwidoSoft software
Description	Application update	with cable
Reference	TWDXCMPFK32	TWDSPU1001V10M

I/O modules



Type of module		Analog					
Number of I/O		2 inputs	4 inputs	8 inputs	1 output	2 outputs	2 inputs/1 output
Connection		Removable screw terminals					
Inputs	Range	0...10 V (1) 4...20 mA (2)			–		0...10 V (1) 4...20 mA (2)
	Resolution	12 bits (4096 points)			–		12 bits (4096 points)
Outputs	Range	–			0...10 V 4...20 mA	± 10 V	0...10 V 4...20 mA
	Résolution	–			12 bits	11 bits + sign	12 bits
Measuring accuracy		0.2 % FS					
Supply voltage		24 VDC					
Dimensions LxDxH		23.5 x 70 x 90 mm					
Reference		TWDAMI2HT	TWDAMI4LT	TWDAMI8HT	TWDAMO1HT	TWDAVO2HT	TWDAMM3HT

(1) Non differential

(2) Differential



Type of module		Discrete					AS-Interface Master
Number of discrete I/O		8	4 inputs/4 outputs	16	16	32	2 modules (4)
Logical input		Sink	Sink/Source				–
Connections		Removable screw terminals			HE 10 connectors		Removable screw terminals
Reference	Inputs 24 VDC	TWDDDI8DT	TWDDMM8DRT	TWDDDI16DT	TWDDDI16DK	TWDDDI32DK	–
	Inputs 120 V	TWDDAI8DT	–	–	–	–	–
	Relay outputs 2 A	TWDDRA8RT	TWDDMM8DRT	TWDDRA16RT	–	–	–
	Source transistor outputs 0.1 A	TWDDDO8TT (3)	–	–	TWDDDO16TK (3)	TWDDDO32TK (3)	TWDNOI10M3

(3) Also available in the following version: sink transistor outputs, (TWDDDO8UT, TWDDDO16UK and TWDDDO32UK)

(4) 2 modules max. 62 discrete slaves max. 7 analog slaves max. AS-Interface/M3, V 2.11 (S.7.4 profile not supported)

Communication modules



Type of module	CANopen Expansion	Serial interface module			Serial interface adaptor			Ethernet Interface
Physical layer (non isolated)	–	RS 232C	RS 485		RS 232C	RS 485		–
Connections	Screw terminals	Mini-DIN connector		Screw terminals	Mini-DIN connector		Screw terminals	RJ45
Protocol	–	Modbus Master/slave, ASCII, remote I/O						–
Compatibility with Twido base	Base 24 or 40 I/O	Modular base TWDLMDA			Compact base TWDLCAA16/24DRF Modular base via the integrated display module TWDXCPODM			All model
Reference	TWDNCO1M	TWDNOZ232D	TWDNOZ485D(5)	TWDNOZ485T	TWDNAC232D	TWDNAC485D	TWDNAC485T	499TWD01100

(5) Screw terminals available : TWDN●Z485D becomes TWDN●Z485T

Modicon TSX Micro Platform of automatism

Basic configurations



3	Type of processor		TSX 3705	TSX 3708	TSX 3710	
	Power supply		110...240 VAC		24 VDC	
	Number of slots	Standard	2 (1 available)	3 (1 available)	2 (1 available)	
		On extension	–	–	2	
	Number of integrated discrete I/O modules		1 (16 I, 12 Q)	2 (32 I, 24 Q)	1 (16 I, 12 Q)	1 (16 I, 12 Q)
	Number of integrated analog I/O channels		–	–	–	–
	Type of integrated I/O		I: 24 VDC, Q: relay	I: 24 VDC, Q: relay	I: 24 VDC, Q: sol.st. 0.5 A	I: 24 VDC, Q: relay
	Application-specific modules (counter, position control)		2 half-size		2 half-size	
	Bus	AS-Interface cabling system	–		1 half-size	
		CANopen machine bus	–		–	
		Fipio fieldbus	–		–	
	Networks	Modbus Plus, Fipway	–		–	
		Ethernet TCP/IP	–		1 external module	
	Memory capacity	Integrated	11 K words		14 K words	
		With PCMCIA extension	–		–	
	Execution time for one instruction	Boolean	0.25 µs		0.25 µs	
		Numerical	4.81 µs		4.81 µs	
	Rack dimensions (WxDxH)		170,3 x 132,5 x 151 mm	230 x 132,5 x 151 mm	170,3 x 132,5 x 151 mm	
	Reference	With screw terminals	TSX3705028DR1	TSX3708056DR1	TSX3710128DT1	TSX3710128DR1
		With HE 10 connector (1)	–	–	TSX3710128DTK1	–

(1) For use with Advantys Telefast ABE7 wiring system

(2) Basic configuration provided without I/O modules

Memory extension



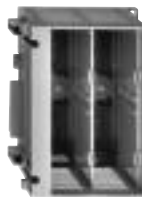
Type of PCMCIA card for TSX 3721/22		Application		
Technology		SRAM	Flash EPROM	Backup
Memory size (3)	32 K words	TSXMRPP128K	TSXMFPP128K	TSXMFPP096K
	32 K words/128 K words	TSXMRPP348K	TSXMCPC224K	–
	64 K words	TSXMRPP224K	TSXMFPP224K	–
	64 K words/128 K words	TSXMRPP384K	TSXMCPC224K	–
	128 K words	TSXMRPC448K	TSXMFPP384K	–
	128 K words/128 K words	TSXMRPC768K	–	–

(3) The 1st value corresponds to the size of the application area, the second to the size of the area for data storage (recipes, production data, etc).



TSX 3710			TSX 3721		TSX 3722	
24 VDC	110...240 VAC		24 VDC	110...240 VAC	24 VDC	110...240 VAC
2 (1 available)			3 (3 available)		3 (3 available)	
2			2		2	
2 (32 I, 32 Q)	1 (16 I, 12 Q)	1 (16 I, 12 Q)	–		–	
–	–	–	–		1 (8 I, 1 Q)	
I: 24 VDC, Q: sol. st. 0.1 A	I: 115 VAC, Q: relay	I: 24 VDC, Q: relay	–		I: 0...10 V or 0/4...20 mA, Q: 0...10 V	
2 half-size			4 half-size		4 half-size (2 integrated channels)	
1 half-size			1 half-size		1 half-size	
–			1 PCMCIA card		1 PCMCIA card	
–			1 PCMCIA card		1 PCMCIA card	
–			1 PCMCIA card		1 PCMCIA card	
1 external module			1 external module		1 external module	
14 K words			20 K words		20 K words	
–			128 K words + 128 K words for file storage		128 K words + 128 K words for file storage	
0.25 µs			0.13 µs (0.19 µs with PCMCIA)		0.13 µs (0.19 µs with PCMCIA)	
4.81 µs			4.50 µs		4.50 µs	
170,3 x 132,5 x 151 mm			230 x 132,5 x 151 mm			
–	TSX3710028AR1	TSX3710028DR1	TSX3721101 (2)	TSX3721001 (2)	TSX3722101 (2)	TSX3722001 (2)
TSX3710164DTK1	–	–				

Mini extension rack

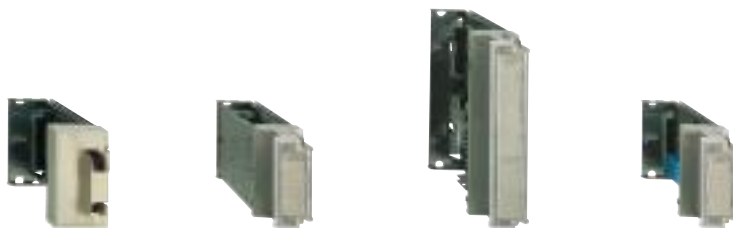


Type of rack	2 slots (4 positions)
For use with	TSX3710/21/22
Rack dimensions (WxDxH)	112,5 x 132,5 x 151 mm
Reference	TSXRKZ2

Process power supplies see chapter 6 "Power supply"

Modicon TSX Micro Platform of automatism

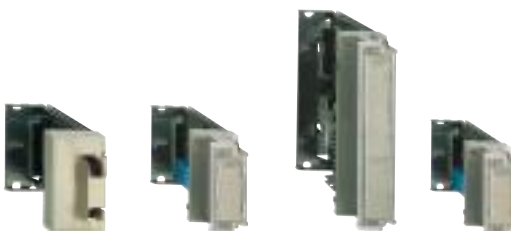
Discrete I/O modules



3

Type of module		Discrete inputs			
Connection		By HE 10 connector (1)		By screw terminals supplied	
Module format		Half		Standard	Half
Number of channels		12		32	8
Input voltage	24 VDC positive logic	TSXDEZ12D2K	–	TSXDEZ32D2	–
	24 VDC positive/negative logic	–	TSXDEZ12D2	–	–
	100...120 VAC	–	–	–	TSXDEZ08A4
	200...240 VAC	–	–	–	TSXDEZ08A5

(1) For use with Advantys Telefast ABE7 wiring system



Type of module		Discrete outputs					
		Solid state			Relay		
Connection		By HE 10 conn. (1)		By screw terms. supplied			
Module format		Half		Standard	Half		
Number of protected channels		8		32	4	8	32
Protection of outputs		Yes		Yes	Yes	No	No
Output voltage/current	24 VDC/0.5 A	TSXDSZ08T2K	TSXDSZ08T2	TSXDSZ32T2	–	–	–
	24 VDC/2 A	–	–	–	TSXDSZ04T22	–	–
	24 VDC/1 A per channel	–	–	–	–	TSXDSZ08R5	–
	24...240 VAC/1 A per channel	–	–	–	–	–	TSXDSZ32R5

(1) For use with Advantys Telefast ABE7 wiring system



Type of module		Discrete I/O					
Connection		By HE 10 connector (1)			By screw terminals supplied		
Module format		Half			Standard		
Number of inputs		8	16	32	16	16	16
Number of outputs		8 solid state	12 solid state	32 solid state	12 solid state	12 solid state	12 solid state
Protection of outputs		Yes			No		
Voltage/current output	24 VDC/0.5 A	TSXDMZ16DTK	TSXDMZ28DTK	–	TSXDMZ28DT	–	–
	24 VDC/0.1 A	–	–	TSXDMZ64DTK	–	–	–
	100...120 VAC/50 VA	–	–	–	–	TSXDMZ28DR	TSXDMZ28AR

(1) For use with Advantys Telefast ABE7 wiring system

Analog I/O modules



Type of module	Analog inputs	
	High level with common point	High level isolated
Connection	By screw terminals supplied	
Number of channels	8	4
Resolution	11 bits + sign	12 bits
Input signal	$\pm 10\text{ V}$, $0\ldots 10\text{ V}$	$0\ldots 20\text{ mA}$, $4\ldots 20\text{ mA}$
Reference	TSXAEZ801	TSXAEZ802

(1) $\pm 10\text{ V}$, $0\ldots 10\text{ V}$, $0\ldots 5\text{ V}$, $1\ldots 5\text{ V}$, $0\ldots 20\text{ mA}$, $4\ldots 20\text{ mA}$, B, E, J, K, L, N, R, S, T, U, Pt 100, Ni 1000 (2 or 4-wire), thermal probe, thermocouple



Type de module	Analog outputs	
	With common point	
Connection	By screw terminals supplied	By screw terminals supplied
Number of channels	4	2
Resolution	11 bits + sign	11 bits + sign or 12 bits
Input signal	$\pm 10\text{ V}$, $0\ldots 10\text{ V}$	$\pm 10\text{ V}$, $0\ldots 20\text{ mA}$, $4\ldots 20\text{ mA}$
Reference	TSXASZ401	TSXASZ200



Type of module	Analog I/O Integrated	Analog I/O High level with common point
Connection	By 15-way SUB-D connector not supplied	By screw terminals supplied
Number of inputs	8	4
Number of outputs	1	2
Resolution	8 bits	11 bits + sign or 12 bits
I/O signal	$0\ldots 10\text{ V}$, $0\ldots 20\text{ mA}$, $4\ldots 20\text{ mA}$	$\pm 10\text{ V}$, $0\ldots 10\text{ V}$, $0\ldots 20\text{ mA}$, $4\ldots 20\text{ mA}$
Reference	TSX3722 (2)	TSXAMZ600

(2) References: see pages 3/16 and 3/17, TSX3722 basic configuration

Modicon TSX Micro

Platform of automatism

Integrated counter modules



3

Type of module	Counting on discrete I/O module	Integrated counting on TSX 3722
Type of inputs for	Sensors, limit switches Totem Pole incremental encoders	Sensors, limit switches Totem Pole incremental encoders
Frequency	500 Hz	10 kHz
Response time	8 ms	8 ms
Number of channels	2 (1)	2 (2)
Reference	TSX37 (3)	TSX3722 (3)

- (1) On the first 4 inputs of the 28, 32 or 64 discrete I/O modules
- (2) Plus 2 channels on the discrete I/O
- (3) References: see pages 3/12 and 3/13, TSX37 basic configuration

Counter/position control modules



Type of module	Counter			Positioning
Type of inputs for	2-wire PNP sensors 24 VDC Totem Pole incremental encoders 5 VDC RS 422, 10...30 VDC			SSI or parallel absolute encoder 5 VDC, 10...30 VDC
Frequency	40 kHz	40 kHz	500 kHz	200 or 1000 kHz
Response time	5 ms	5 ms		5 ms
Number of channels	1	2		1
Reference	TSXCTZ1A	TSXCTZ2A	TSXCTZ2AA	TSXCTZ1B



Communication modules



Type of module		Ethernet TCP/IP network For TSX 3710/21/22 PLCs	
Speed		10/100 Mbps	10/100 Mbps
Standard services		TCP/IP(Uni-TE, Modbus)	TCP/IP(Uni-TE, Modbus)
Transparent Ready	Class	B20	C20
	I/O Scanning	Yes	Yes
Web server	Standard services	Yes	Yes
	FactoryCast services	–	Yes with 8 Mb of user Web pages and graphics editor
Reference		TSXETZ410	TSXETZ510

3



Type of module		AS-Interface cabling system	CANopen machine bus	Fipio fieldbus
Name and description		Half size in-rack	PCMCIA card	PCMCIA card
Speed		167 Kbps	20 Kbps...1 Mbps dep. on distance	1 Mbps
Reference		TSXSAZ10	TSXCPC110	TSXFPP10



Type of module		Serial links Uni-Telway, Modbus	
Name and description		Integrated port	Multiprotocol PCMCIA card
Speed		19.2 Kbps	1.2...19.2 Kbps
Reference	With interface RS 485	TSX37 (1)	TSXSACP114
	RS 232D	–	TSXSACP111
	20 mA CL	–	TSXSACP112

(1) References: see pages 3/12 and 3/13, TSX3705/08/10 PLCs with link integrated on TER terminal port, or TSX3721/22 PLCs with link integrated on AUX terminal port.



Type of module		Networks Modbus Plus	Fipway
Name and description		PCMCIA card	PCMCIA card
Speed		1 Mbps	1 Mbps
Reference		TSXMBP100	TSXFPP20

Modicon Premium Platform of automatism

Processors under Unity Pro software



3	Type of processor		TSX 57C configuration 1 rack max.	TSX 5700 1 rack max.	TSX 5710 4 racks max.	TSX 5720 16 racks max.
	Number of I/O in racks	Discrete Analog	192 12	256 12	512 24	1024 80
	Integrated process control		No / Yes	No / Yes	No / Yes	30 loops / Yes
	Application-specific channels (counter, position control, weighing)		4	4	8	24
	Bus	AS-Interface cabling system	1	1	2	4
		CANopen machine bus	1 (integrated)	1 (integrated)	1	1
		INTERBUS, Profibus DP fieldbus	–	–	1	1
	Networks (Ethernet, Modbus Plus, Fipway)		1	1	1	2 (7)
	Memory capacity	Without PCMCIA extension	96 Kb data/prog.	96 Kb data/prog.	96 Kb data/prog.	160/192 Kb data/prog. (1)
		With PCMCIA extension	96 Kb data/128 Kb prog.	96 Kb data/128 Kb prog.	96 Kb data/224 Kb prog.	160/192 Kb data (1)/768 Kb prog.
	Execution time for one instruction	Boolean	0.19 µs	0.19 µs	0.19 µs	0.19 µs
		On word or arithmetic	0.25 µs	0.25 µs	0.25 µs	0.25 µs
	Reference	Without integrated port	–	–	TSXP57104M	TSXP57204M
		Integrated Ethernet	–	–	TSXP571634M	TSXP572634M
		Integrated CANopen	TSXP57C●0244M (2)	TSXP570244M	–	–
		Integrated Fipio	–	–	TSXP57154M	TSXP57254M

(1) The second value corresponds to the integrated memory capacity when the processor is equipped with a Fipio manager integrated link

(2) 24 VDC version : TSXP57CD0244M, 100...240 VAC version : TSXP57CA0244M

(3) Processor with double format

(4) PC format card on PCI bus

Processors under PL7 software



Type of processor		TSX 5710 4 racks max.	TSX 5720 16 racks max.
Number of I/O in racks	Discrete Analog	512 24	1024 80
Integrated process control		No	30 loops
Application-specific channels (counter, position control, weighing)		8	24
Bus	AS-Interface cabling system	2	4
	CANopen machine bus	1 (with TSXP57103M)	1
	INTERBUS, Profibus DP fieldbus	–	1
Networks (Ethernet, Modbus Plus, Fipway)		1	1
Memory capacity	Without PCMCIA extension	32 K words data/prog.	48 K words data/prog. (5)
	With PCMCIA extension	32 K words data/64 K words prog.	32 K words data (5)/160 K words prog.
Execution time for one instruction	Boolean	0.50 µs	0.19 µs
	On word or arithmetic	0.62 µs	0.25 µs
Reference	Without integrated port	TSXP57103M	TSXP57203M
	Integrated Ethernet	–	TSXP572623M
	Integrated Fipio	TSXP57153M	TSXP57253M
	Integrated Ethernet and Fipio	–	TSXP572823M

(5) The second value corresponds to the processor with integrated Fipio bus manager link.

(6) PC format card for ISA bus.

(7) Unity Pro V2.3 min.

Atrium slot-PLCs under Unity Pro software



TSX 5730 16 racks max.	TSX 5740 16 racks max.	TSX 5750 16 racks max.	PCI 5720 16 racks max.	PCI 5730 16 racks max.
1024	2040	2040	1024	1024
128	256	512	80	128
45 loops / Yes	60 loops / Yes	90 loops / Yes	30 loops / Yes	45 loops / Yes
32	64	64	24	32
8	8	8	4	8
1	1	1	1	1
3	4	5	1	3
3	4	4	3 (7)	4
192/208 Kb data/prog. (1)	320 Kb data/prog.	640 Kb data/prog.	160 Kb data/prog. (1)	208 Kb data/prog. (1)
192/208 Kb data (1)/1,75 Mb prog.	440 Kb data/2 Mb prog.	896 Kb data/7 Mb prog.	160 Kb data/768 Kb prog.	208 Kb data (1)/1,75 Mb prog.
0.12 µs	0.06 µs	0.037 µs	0.19 µs	0.12 µs
0.17 µs	0.07 µs	0.045 µs	0.25 µs	0.17 µs
TSXP57304M	–	–	TSXPCI57204M (4)	–
TSXP573634M	TSXP574634M	TSXP575634M	–	–
–	–	–	–	–
TSXP57354M	TSXP57454M	TSXP57554M	–	TSXPCI57354M (4)

3

Atrium slot-PLCs under PL7 software



TSX 5730 16 racks max.	TSX 5740 16 racks max.	PCX 5720 16 racks max.	PCX 5730 16 racks max.
1024	2048	1024	1024
128	256	80	128
45 loops	60 loops	30 loops	45 loops
32	64	24	32
8	8	4	8
1	1	1	1
2	2	1	2
3	4	1	3
64/80 K words data/prog. (5)	96 K words data/prog.	48 K words data/prog.	80 K words data/prog.
80/96 K words data (5)/384 K words prog.	176 K words data/992 K words prog. (8)	48 K words data/160 K words prog.	96 K words data/384 K words prog.
0.12 µs	0.06 µs	0.19 µs	0.12 µs
0.17 µs	0.08 µs	0.25 µs	0.17 µs
TSXP57303M	–	TPCX57203M (6)	–
TSXP573623M	–	–	–
TSXP57353M	TSXP57453M	–	TPCX57353M (6)
–	TSXP574823M	–	–

(8) with PL7 V4.4 min.

Modicon Premium Platform of automatism

Memory extensions for Unity Pro processors



3

Type of PCMCIA card		Application		Additional data
Technology		SRAM	Flash EPROM only	SRAM
Memory size	96 Kb	–	TSXMFPPB096K (3)	–
	128 Kb	TSXMRPP128K	TSXMFPP128K	–
	224 Kb	TSXMRPP224K / TSXMCPC224K	TSXMFPP224K	–
	384 Kb	TSXMRPP384K	TSXMFPP384K	–
	448 Kb	TSXMRPC448K (1)	–	–
	512 kb	TSXMCPC512K	–	–
	768 Kb	TSXMRPC768K (1)	TSXMFPP512K (512 Ko)	–
	1 Mb	TSXMRPC001M (1)	TSXMFPP001M	–
	1.7 Mb	TSXMRPC01M7	–	–
	2 Mb	TSXMRPC002M (1)	TSXMCPC002M (2)	–
	3 Mb	TSXMRPC003M (1)	–	–
	4 Mb	–	TSXMFPP004M	TSXMRPF004M
	7 Mb	TSXMRPC007M (1)	–	–
	8 Mb	–	–	TSXMRPF008M

(1) By configuration, the user can reserve part of the memory space for data storage (recipes, production data) on request.

(2) These cards have an additional SRAM area for storing data (recipes, production data).

(3) Backup cartridge of the program when this one reside entirely in PLC internal memory.

Memory extensions for PL7 processors



Type of PCMCIA card		Application		Additional data
Technology		SRAM	Flash EPROM only	SRAM
Memory size (4)	32 K words	TSXMRPP128K	TSXMFPP128K	–
	64 K words	TSXMRPP224K	TSXMFPP224K	–
	64 K words/128 K words	TSXMRPP384K	TSXMCPC224K	–
	96 K words	–	TSXMFPPB096K	–
	128 K words	TSXMRPC448K	TSXMFPP384K	–
	128 K words/128 K words	TSXMRPC768K (5)	–	–
	256 K words	TSXMRPC001M	–	–
	256 K words/640 K words	TSXMRPC01M7 (5)	–	–
	384 K words/640 K words	TSXMRPC002M	–	–
	512 K words	TSXMRPC003M (5)	–	–
	992 K words/640 K words	TSXMRPC007M	–	–
	2048 K words	–	–	TSXMRPF004M

(4) The 1st value corresponds to the size of the application area, the second to the size of the additional data area for storing data (recipes, production data, etc).

(5) These cards have an additional SRAM area for storing application object symbols.

(6) with PV0.05

Power supply modules ⁽¹⁾



Type of power supply module for	Premium					Atrium ⁽²⁾
Input voltage	24 VDC		100...240 VAC	100...120/200...240 VAC		24 VDC
Output voltage	5 VDC/24 VDC					5 VDC
Total useful power	26 W	50 W	26 W	50 W	77 W	26 W
Format	Standard	Double	Standard	Double	Double	–
Reference	TSXPSY1610M	TSXPSY3610M	TSXPSY2600M	TSXPSY5500M	TSXPSY8500M	TSXPSI2010

(1) Process power supplies see chapter 6 “Power supply”

(2) Only for Atrium slot-PLCs under Unity

3

Racks



Type of rack			Non extendable	Extendable
For configuration			Mono-rack	Multi-rack (16 max.)
		Dimensions WxDxP		
Reference	4 positions	188 x 160 x 151,5 mm (3)	–	TSXRKY4EX
	6 positions	261,6 x 160 x 151,5 mm (3)	TSXRKY6	TSXRKY6EX
	8 positions	335,3 x 160 x 151,5 mm (3)	TSXRKY8	TSXRKY8EX
	12 positions	482,6 x 160 x 151,5 mm (3)	TSXRKY12	TSXRKY12EX

(3) Height of I/O modules : 151,5 mm with HE 10 or SUB-D connectors, 165 mm with screw terminals

Connection accessories

Type	Bus X daisy chaining cable for extendable racks	Line terminators
	–	Set of 2
Reference	–	TSXTLYEX
	L = 1 m	TSXCBY010K
	L = 3 m	TSXCBY030K
	L = 5 m	TSXCBY050K
	L = 12 m	TSXCBY120K
	L = 18 m	TSXCBY180K
	L = 28 m	TSXCBY280K
	L = 38 m	TSXCBY380K
	L = 50 m	TSXCBY500K
	L = 72 m	TSXCBY720K
	L = 100 m	TSXCBY1000K

Modicon Premium Platform of automatism

Discrete I/O modules



3

Type of module		Discrete inputs				
Connection		By screw terminals TSXBLY01 (1)		By HE 10 connector (2) high density		
Number of isolated channels		8	16	16 (3)	32	64
Input voltage	24 VDC	TSXDEY08D2	TSXDEY16D2	TSXDEY16FK	TSXDEY32D2K	TSXDEY64D2K
	48 VDC	–	TSXDEY16D3	–	TSXDEY32D3K	–
	24 VAC	–	TSXDEY16A2 (4)	–	–	–
	48 VAC	–	TSXDEY16A3	–	–	–
	100...120 VAC	–	TSXDEY16A4	–	–	–
	200...240 VAC	–	TSXDEY16A5	–	–	–

(1) Terminal block to be ordered separately

(2) For use with Advantys Telefast ABE7 wiring system

(3) Module with high-speed isolated inputs (filtering from 0.1 to 7.5 ms) able to activate the event-triggered task

(4) Module also compatible with 24 VDC negative logic



Type of module		Discrete outputs				Relay		Triac	
Connection		Solid state		By HE10 conn. (2)		By screw terminals TSXBLY01 (1)			
Number of protected channels		8	16	32	64	8	16	8	16
Output voltage/current	24 VDC/0,5 A	TSXDSY08T2	TSXDSY16T2	–	–	–	–	–	–
	24 VDC/2 A	TSXDSY08T22	–	–	–	–	–	–	–
	24 VDC/0.1 A	–	–	TSXDSY32T2K	TSXDSY64T2K	–	–	–	–
	48 VDC/1 A	TSXDSY08T31	–	–	–	–	–	–	–
	48 VDC/0.25 A	–	TSXDSY16T3	–	–	–	–	–	–
	24...48 VDC-24...240 VAC/5 A Th.c	–	–	–	–	TSXDSY08R5A	–	–	–
	24...120 VAC/5 A Th.c	–	–	–	–	TSXDSY08R4D	–	–	–
	24...120 VAC/1 A	–	–	–	–	–	–	–	TSXDSY16S4
	48...240 VAC/1 A	–	–	–	–	–	–	–	TSXDSY16S5
	48...240 VA /2 A	–	–	–	–	–	–	TSXDSY08S5	–
	24 VDC-24...240 VAC/3A	–	–	–	–	TSXDSY08R5	TSXDSY16R5	–	–

(1) Terminal block to be ordered separately

(2) For use with Advantys Telefast ABE7 wiring system



Type of module		Discrete I/O	
Connection		By HE 10 connector (2) high density	
Number of inputs		16 high-speed	
Number of protected outputs		12 solid state	12 reflex or timed
Output voltage/current	24 VDC/0.5 A	TSXDMY28FK	TSXDMY28R5

(2) For use with Advantys Telefast ABE7 wiring system

Connection accessories: See www.telemecanique.com



Analog I/O modules



Type of module		Analog input					
		High level with common point			High level isolated	Low level isolated	
Connection		By 25-way SUB-D connector					By terminal block (1)
Number of channels		4 high-speed	8	16	8	16	4
Resolution		16 bits	12 bits		16 bits	16 bits	16 bits
Isolation	Between channels	Common point	Common point	Common point	± 200 VDC	± 100 VDC	± 2830 Vrms
	Between channels and earth	~ 1000 Vrms	~ 1000 Vrms	~ 1000 Vrms	~ 1000 Vrms	~ 1000 Vrms	~ 1780 Vrms
Reference	High level input (2)	TSXAEY420	TSXAEY800	TSYAEY1600	TSXAEY810	–	–
	Multi-range	–	–	–	–	TSXAEY1614 (3)	TSXAEY414 (4)

- (1) Screw terminals **TSXBLY01** to be ordered separately
(2) ± 10 V, 0...10 V, 0...5 V, 1...5 V, 0...20 mA, 4...20 mA
(3) ± 63 mV thermocouple (B, E, J, K, L, N, R, S, T, U)
(4) ± 10 V, ± 5 V, 0...10 V, 0...5 V, 1...5 V, 0...20 mA, 4...20 mA, -13...+63 mV, 0...400 W, 0...3850 W, thermal probe, thermocouple



Type of module		Analog output	
		Isolated	With common point
Connection		By screw terminals TSXBLY01 (5)	By 25-way SUB-D connector
Number of channels		4	8
Resolution		11 bits + sign	13 bits + sign
Isolation	Between channels	~ 1500 Vrms	Common point
	Between channels and earth	~ 1500 Vrms	~ 1000 Vrms
Reference	Input signal (6)	TSXASY410	TSXASY800

- (5) Terminal block to be ordered separately
(6) ± 10 V, 0...10 V, 0...20 mA, 4...20 mA.

Modicon Premium Platform of automatism

Counter modules



Type of module	Counter		Counter/measurement	Electronic cam
Type of inputs for	Sensors (1) Incremental encoders (2)		Sensors (1) Encoders (2)(3)	Incremental encoders (2) Absolute encoders (4)
Counting	40 kHz		500 kHz/200 kHz (4)	
Cycle time module	5 ms	10 ms	1 ms	–
Number of channels	2	4	2	128 cams
Number of axes	–	–	–	1
Reference	TSXCTY2A	TSXCTY4A	TSXCTY2C	TSXCCY1128

(1) For 2/3-wire PNP/NPN 24 VDC sensors

(2) For 5 VDC RS422, 10...30 VDC Totem Pole incremental encoders

(3) For SSI serial or parallel output absolute encoders

(4) For RS485 serial or parallel output absolute encoders

Motion control modules



Module type	For translators (amplifier for stepper motor)		For analog control servomotors (for asynchronous and brushless motors)				
Control outputs	RS 422		+/- 10 V				
Compatible with drives	Lexium 05, Twin Line		Lexium 05/17D, Twin Line				
Functions	Linear axes	–	Limited	Limited or infinite	Limited or infinite	Limited or infinite	Limited or infinite(5)
	Slave axes	–	With static ratio	With dynamic ratio	With dynamic ratio	With dynamic ratio	–
Frequency for each axis	187 kHz		500 kHz with incremental encoder, 200 kHz with absolute encoder (6)				
Number of axes	1	2	2	4	2	4	3
Reference	TSXCFY11	TSXCFY21	TSXCAY21	TSXCAY41	TSXCAY22	TSXCAY42	TSXCAY33

(5) With linear interpolation on 2 or 3 axes

(6) SSI serial or with parallel outputs



Module type	Servomotors with SERCOS® digital ring (for brushless motors)		
Control outputs	SERCOS® network ring		
Compatible with ranges	Lexium 17D		
Functions	Linear or infinite independent axes, slave axes with cam profile or ratio		
Processing	4 sets of axes with linear interpolation from 2 to 8 axes	4 sets of axes with linear and circular interpolation from 2 to 3 axes (7)	4 sets of axes with linear interpolation from 2 to 8 axes
Frequency for each axis	4 Mb SERCOS® network ring		
Number of axes	8 (8)	8 (8)	16 (9)
Reference	TSXCSY84	TSXCSY85	TSXCSY164

(7) TSXCSY85 module supplied with TJE trajectory editor: linear trajectories with links between segments according to polynomial or circular interpolation and circular trajectories.

(8) 8 real axes, 4 imaginary axes and 4 remote axes

(9) 16 axes (real axes, imaginary and remote axes)

Weighing modules



Type of module	ISP Plus supplied uncalibrated		supplied calibrated and offer
Load cell inputs / outputs	50 measurements (for 1 to 8 load cells) / 2 discrete and 1 RS 485 for display unit		
Reference	Without display unit	TSXISPY101	Please consult your Schneider-electric agency
	With display unit TSXXBTH100	TSXISPY111	Please consult your Schneider-electric agency

Connection accessories: See www.telemecanique.com



Communication modules

Ready



Type of module		Ethernet TCP/IP				
Speed		10 Mbps	10/100 Mbps			
Standard services		Ethway, TCP/IP (Uni-TE, Modbus)	TCP/IP (Uni-TE, Modbus)			
Transparent Ready	Classe	C10	B30	B30	C30	D10
	Global Data	–	Yes	Yes	Yes	–
	I/O Scanning	–	Yes	Yes	Yes	–
	TCP Open	Yes	–	–	Yes	–
Web server	Standard services	Yes	Yes	Yes	Yes	Yes
	FactoryCast services	Yes	–	–	Yes	–
	FactoryCast HMI services	–	–	–	–	Yes
Reference		TSXETY110WS	TSXP57 (1)	TSXETY4103	TSXETY5103	TSXWMY100

(1) References: see pages 3/18 and 3/19, Premium processors with integrated Ethernet TCP/IP port



Type of module		AS-Interface cabling system	CANopen machine bus	Fipio manager fieldbus	INTERBUS fieldbus	Profibus DP fieldbus
Name and description		In-rack	PCMCIA	Integrated port	In-rack	In-rack
Speed		167 Kbps	20 K...1 Mbps	1 Mbps	0.5 Mbps	9.6 K...12 Mbps
Reference		TSXSAY1000	TSXCPC110	TSXP57 (2)	TSXIBY100	TSXPBY100

(2) References: see pages 3/18 and 3/19, Premium processors with integrated Fipio port



Type of module			Serial links			Modbus		ASCII
			Uni-Telway					
Name and description			Integrated port	In-rack	PCMCIA	In-rack	PCMCIA	PCMCIA
Speed			19.2 Kbps	19.2 Kbps	1.2...19.2 Kbps	19.2 Kbps	1.2...19.2 Kbps	1.2...19.2 Kbps
Reference	With interface	RS 485	TSXP57 (1)	TSXSCY21601 (2)	TSXSACP114	TSXSCY11601	TSXSACP114	TSXSACP114
		RS 232D	–	–	TSXSACP111	–	TSXSACP111	TSXSACP111
		20mA CL	–	–	TSXSACP112	–	TSXSACP112	TSXSACP112

(1) References: see pages 3/18 and 3/19, Premium processors with integrated Ethernet TCP/IP port

(2) Also designed for Modbus serial (channel 0).



Type of module		Other networks		
		Modbus Plus	Fipway	Fipio (agent function)
Name and description		PCMCIA card	PCMCIA card	PCMCIA card
Speed		1 Mbps	1 Mbps	1 Mbps
Reference		TSXMCP100	TSXFPP20	TSXFPP10

Connection accessories: See www.telemecanique.com

Modicon Quantum Platform of automatism

Processors under Unity Pro software



3

Type of processor		Simple applications	Simple and medium complexity applications
Max. number of discrete I/O (1)	Local	Unlimited (27 slots max.)	
	Decentralized/distributed	31744 inputs (RIO)/8000 inputs (DIO) and 31744 outputs (RIO)/8000 outputs (DIO)	
Max. number of analog I/O (1)	Local	Unlimited (27 slots max.)	
	Decentralized/distributed	1984 inputs (RIO)/500 inputs (DIO) and 1984 outputs (RIO)/500 outputs (DIO)	
Type of application-specific I/O		Intrinsically safe I/O, counter, motion control, high-speed interrupt inputs, time-stamp, serial link, AS-Interface sensor/actuator bus	
Communication ports (2)	Integrated Modbus	2 RS 232/RS 485	2 RS 232
	Modbus Plus	1 integrated, 2 in local rack	1 integrated, 6 in local rack
	Ethernet TCP/IP	2 in local rack	6 in local rack
	Fieldbus	Profibus DP: 2 in local rack	INTERBus/Profibus DP: 6 in local rack
Memory capacity	Integrated	2 Mb	2 Mb
	With PCMCIA extension	—	—
	Data storage	—	—
Reference		140CPU31110	140CPU43412U

(1) The maximum values for the number of discrete or analog I/O are not cumulative

(2) The numbers of communication modules are not cumulative, 2 or 6 in local rack, depending on model

(3) Processor compatible with Unity Pro software after updating its firmware (via OS-Loader included in Unity Pro)

Processors under Concept/ProWORK software



Type of processor		Simple applications	
Max. number of discrete I/O (1)	Local	Unlimited (27 slots max.)	
	Decentralized/distributed	31744 inputs (RIO)/8000 inputs (DIO) and 31744 outputs (RIO)/8000 outputs (DIO)	
Max. number of analog I/O (1)	Local	Unlimited (27 slots max.)	
	Decentralized/distributed	1984 inputs (RIO)/500 inputs (DIO) and 1984 outputs (RIO)/500 outputs (DIO)	
Type of application-specific I/O		Intrinsically safe I/O, counter, motion control, high-speed interrupt inputs, time-stamp, serial link, AS-Interface sensor/actuator bus	
Communication ports (2)	Integrated Modbus	1 RS 232	
	Modbus Plus	1 integrated, 2 in local rack	
	Ethernet TCP/IP	2 in local rack	
	Fieldbus	INTERBus/Profibus DP: 2 in local rack	
Memory capacity	Integrated	256 Kb	512 Kb
Reference		140CPU11302	140CPU11303

(1) The maximum values for the number of discrete or analog I/O are not cumulative

(2) The numbers of communication modules are not cumulative, 2 or 6 in local rack, depending on model

(3) Processor compatible with Unity Pro software after updating its firmware (via OS-Loader included in Unity Pro)



	Complex applications		Hot Standby redundant applications
	Unlimited (27 slots max.)	Unlimited (26 slots max.)	
	31744 inputs (RIO)/8000 inputs (DIO) and 31744 outputs (RIO)/8000 outputs (DIO)		
	Unlimited (27 slots max.)		
	1984 inputs (RIO)/500 inputs (DIO) and 1984 outputs (RIO)/500 outputs (DIO)		
	Intrinsically safe I/O, counter, motion control, high-speed interrupt inputs, time-stamp, serial link, AS-Interface sensor/actuator bus		
	2 RS 232	1 RS 232/485	
	1 integrated, 6 in local rack		
	6 in local rack	1 integrated, 6 in local rack	6 in local rack
	INTERBUS/Profibus DP: 6 in local rack	Profibus DP: 6 in local rack	
	4 Mb	2 Mb	
	—	7 Mb	
	—	8 Mb	
	140CPU53414U	140CPU65150	140CPU65160
			140CPU67160

3



	Simple and medium complexity applications	Complex applications
	Unlimited (27 slots max.)	
	31744 inputs (RIO)/8000 inputs (DIO) and 31744 outputs (RIO)/8000 outputs (DIO)	
	Unlimited (27 slots max.)	
	1984 inputs (RIO)/500 inputs (DIO) and 1984 outputs (RIO)/500 outputs (DIO)	
	Intrinsically safe I/O, counter, motion control, high-speed interrupt inputs, time-stamp, serial link, AS-Interface sensor/actuator bus	
	2 RS 232	
	1 integrated, 6 in local rack	
	6 in local rack	
	INTERBUS/Profibus DP: 6 in local rack	
	2 Mb	4 Mb
	140CPU43412A (3)	140CPU53414A (3)

Modicon Quantum

Platform of automatism

Power supply modules
(1)



ype of power supply module for				Quantum				
Input voltage				24 VDC	48...60 VDC	100...150 VDC	120...230 VAC	115/230 VAC
Output current				8 A/3 A (4)	8 A	8 A/3 A	8 A/3 A (1)	11 A
Reference	Type	Standalone (2)		140CPS21100	–	140CPS51100	140CPS11100	–
		Summable		140CPS21400	140CPS41400	–	–	140CPS11420
		Redundant		140CPS22400	140CPS42400	140CPS52400	140CPS12400	140CPS12420

(1) Process power supplies see chapter 6 “Power supply”

(2) The output current for the standalone power supply modules is 3 A

PCMCIA memory extensions



Type of PCMCIA card for Unity processors 140CPU65/67			Application		Additional data
Technology			SRAM	Flash EPROM	SRAM
Memory size	512 Kb/512 Kb (3)		–	TSXMCPC512K	–
	1 Mb (4)		TSXMRPC001M	TSXMFPP001M	–
	2 Mb (4)		TSXMRPC002M	TSXMFPP002M	–
	2 Mb/1 Mb (3)		–	TSXMCPC002M	–
	3 Mb (4)		TSXMRPC003M	–	–
	4 Mb		–	TSXMFPP004M	TSXMRPF004M
	7 Mb (4)		TSXMRPC007M	–	–
	8 Mb		–	–	TSXMRPF008M

(3) The 1st value corresponds to the size of the application area, the second to the size of the additional data area for storing data (recipes, production data, etc)

(4) By configuration the user can reserve part of the memory space for data storage (recipes, production data, etc)

Racks



Type			Racks	Rack extension module ⁽¹⁾
Dimensions WxDxH				
References	2 slots	104x104x290 mm	140XBP00200	–
	3 slots	143x104x290 mm	140XBP00300	–
	4 slots	184x104x290 mm	140XBP00400	–
	6 slots	265x104x290 mm	140XBP00600	–
	10 slots	428x104x290 mm	140XBP01000	–
	16 slots	671x104x290 mm	140XBP01600	–
	Rack extension		–	140XBE10000

(1) Local extension module, to be placed in main rack and secondary rack.

Connection accessories ⁽²⁾

Type		Cable for extension racks (main and secondary)
References	L = 1 m	140XCA71703
	L = 2 m	140XCA71706
	L = 3 m	140XCA71709

(2) Other accessories: See www.telemecanique.com

Modicon Quantum Platform of automatism

Discrete I/O modules



3

Type of module		Discrete inputs					
Connection		By screw terminals 140XTS00200 (to be ordered separately)					
Number of isolated channels		16	4 groups of 8	3 groups of 8	2 groups of 8	6 groups of 16	8 groups of 2
Input voltage	5 VDC TTL (negative logic)	–	140DDI15310	–	–	–	–
	24 VDC	–	140DDI35300(1)	–	–	140DDI36400	–
	10...60 VDC	–	140DDI85300	–	–	–	140DDI84100
	20...30 VDC	–	140DSI35300(1)	–	–	–	–
	125 VDC	–	–	140DDI67300	–	–	–
	24 VAC	140DAI34000	140DAI35300	–	–	–	–
	48 VAC	140DAI44000	140DAI45300	–	–	–	–
	115 VAC	140DAI54000	140DAI55300	–	140DAI54300	–	–
	230 VAC	140DAI74000	140DAI75300	–	–	–	–

(1) For negative logic, replace 00 at the end of the reference with 10, for example **140DDI35300** becomes **140DDI35310**.



Type of module		Discrete outputs					
Connection		By screw terminals 140XTS00200 (to be ordered separately)					
Number of protected channels		16	4 groups of 8	4 groups of 4	2 groups of 8	6 groups of 16	2 groups of 6
Output voltage/current	5 VDC TTL/0.075 A (2)	–	140DDO15310	–	–	–	–
	24 VDC/0.5 A	–	140DDO35301(1)	–	–	–	–
	10...30 VDC/0.5 A (3)	–	140DVO85300	–	–	–	–
	19.2...30 VDC/0.5 A	–	–	–	–	140DDO36400	–
	10...60 VDC/2 A	–	–	–	140DDO84300	–	–
	24...125 VDC/0.75 A	–	–	–	–	–	140DDO88500
	24...48 VAC/4 A	–	–	140DAO84220	–	–	–
	24...115 VAC/4 A	140DAO84010	–	–	–	–	–
	24...230 VAC/ 4-3 A	140DAO84000	140DAO85300	–	–	–	–
	100...230 VAC/4-3 A	–	–	140DAO84210	–	–	–

(1) For negative logic, replace 01 at the end of the reference with 10, for example **140DDO35301** becomes **140DDO35310**.

(2) Negative logic

(3) Controlled outputs



Type of module		Discrete I/O			Discrete outputs	
		Solid state			Relay	
Connection		By screw terminals 140XTS00200 (to be ordered separately)			–	
Number of I/O		2 groups of 8/2 groups of 4		1 group of 4/ 4 isolated	–/16 NO	–/8 NO/NC
Input voltage		24 VDC	125 VAC	125 VDC	–	–
Output voltage/current		30 VDC/15 A	125 VAC/4 A	125 VDC/4 A	150 VDC or 250 VAC/2 A	150 VDC or 250 VAC/5 A
Reference		140DDM39000	140DAM59000	140DDM69000	140DRA84000	140DRC83000



Analog I/O modules



Type of module	Analog inputs				
Connection	By screw terminals 140XTS00200 (to be ordered separately)				
Number of channels	8	16	8		
Input signal	4...20 mA 1...5 V	0...25/20 mA 4...20 mA	(1)	Thermal probe Pt, Ni	Thermocouple (2)
Resolution	12 bits	0...25000 points	16 bits	12 bits + sign	16 bits
Reference	140ACI03000	140ACI04000	140AVI03000	140ARI03010	140ATI03000

(1) 0...25 mA, ± 20 mA, 4...20 mA, 0...10 V, ± 10 V, 0...5 V, ± 5 V, 1...5 V.

(2) Type B, E, J, K, R, S, T, mV



Type of module	Analog output		
Connection	By screw terminals 140XTS00200 (to be ordered separately)		
Number of channels	4	8	4
Input signal	4...20 mA	0...25/20 mA 4...20 mA	0...10 V, ± 10 V 0...5 V, ± 5 V
Resolution	12 bits	0...25000 points	12 bits
Reference	140ACO02000	140ACO13000	140AVO02000



Type of module	Analog I/O
Connection	By screw terminals 140XTS00200 (to be ordered separately)
Number of inputs	4
Number of outputs	2
Input signal	0...20 mA, ± 20 mA, 4...20 mA, 0...10 V, ± 10 V, 0...5 V, ± 5 V, 1...5 V.
Resolution	Inputs 16 bits, outputs 12 bits
Reference	140AMM09000

Modicon Quantum

Platform of automatism
Intrinsically safe I/O modules



3

Type of module	I/O 				
	Discrete		Analog		
Connection	By screw terminal 140XTS33200 (to be ordered separately)				
Number of inputs	8	–	8	–	
Number of outputs	–	8	–	8	
Input signal	–	–	Thermal probe	0...25/20 mA	
			Thermocouple (1)	4...25 mA	
Resolution	–	–	12 bits + sign	0...25000 points	15 bits
Reference	140DII33000	140DIO33000	140AII33000	140AII33010	140AIO33000

(1) Type J, K, E, T, S, R, B, mV

Counter and special purpose modules



Type of module	High-speed counter		High-speed inputs with interrupt	Time-stamp system	
Type of inputs for	Incremental encoders		Discrete 24 VDC (2)	DCF 77	Discrete
				24 VDC (3)	24...125 VDC
Counting frequency	100 kHz	500 kHz	–	–	
Number of channels	5	2	16	1	32
Reference	140EHC10500	140EHC20200	140HLI34000	140DCF07700	140ERT85410

(2) 3 operating modes: Interrupt, latch, high-speed inputs, on rising or falling edge.

(3) For GPS or DCF time receiver



Communication modules



Type of module		Ethernet TCP/IP network			
Speed		10/100 Mbps			
Standard services		TCP/IP (Modbus)			
Transparent Ready	Class	B30	B30	C30	D10
	Global Data	Yes	Yes	Yes	–
	I/O Scanning	Yes	Yes	Yes	–
	FDR server	Yes	Yes	Yes	–
	SNMP protocol	Yes	Yes	Yes	Yes
Web server	Standard services	Yes	Yes	Yes	Yes
	FactoryCast services	–	–	Yes	Yes
	FactoryCast HMI services	–	–	–	Yes
Reference		140CPU651 (1)	140NOE77101	140NOE77111	140NWM10000

(1) References: see pages 3/26 and 3/27, Quantum processors with integrated Ethernet TCP/IP



Type of module	Modbus Plus network	AS-Interface cabling system	INTERBUS fieldbus (2)	Profibus DP V0 fieldbus (3)
Name and description	Integrated link	In-rack	In-rack	In-rack
Speed	1 Mbps	167 Kbps	1 Mbps	9,6 K...12 Mbps
Reference	140CPU (4)	140EIA92100	140NOA61100	140CRP81100

(2) Compatible with concept and ProWORK32 software

(3) Available in Profibus DP V1 version, please consult your Schneider Electric agency

(4) References: see pages 3/26 and 3/27, Quantum processors with integrated Modbus Plus



Type of module	Serial link	
	Modbus	ASCII
Name and description	Integrated link	In-rack
Speed	19.2 Kbps	19.2 Kbps
Reference	140CPU (5) (6)	140ESI06210

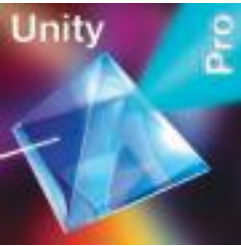
(5) References: see pages 3/26 and 3/27, Quantum processors with integrated Modbus

(6) RS 232/RS 485 on **140CPU651●●** and **140CPU67160** processors and RS 232 on **140CPU31110**, **140CPU43412A**, **140CPU53414A** processors.

Automation

Unity software

For Modicon Premium, Quantum and Atrium slot PLCs



3	Type of software		Unity Pro Medium version 2.2			
	Type of license version 2.2		Single (1 station)	Group (3 stations)	Open Team (10 stations)	Site (> 10 stations)
	References	Software package	UNYSPUMFUCD22	UNYSPUMFGCD22	–	–
		Update (1)	UNYSPUMZUCD22	UNYSPUMZGCD22	–	–
	Type of software		Unity Pro Large version 2.2			
Type of license version 2.2		Single (1 station)	Group (3 stations)	Open Team (10 stations)	Site (> 10 stations)	
References	Software package	UNYSPULFUCD22	UNYSPULFGCD22	UNYSPULFTCD22	UNYSPULFFCD22	
	Update (1)	UNYSPULZUCD22	UNYSPULZGCD22	UNYSPULZTCD202	UNYSPULZFCD22	
Type of software		Unity Pro Extra large version 2.2				
Type of license version 2.2		Single (1 station)	Group (3 stations)	Open Team (10 stations)	Site (> 10 stations)	
References	Software package	UNYSPUEFUCD22	UNYSPUEFGCD22	UNYSPUEFTCD22	UNYSPUEFFCD22	
	Update (2)	UNYSPUEZUCD22	UNYSPUEZGCD22	UNYSPUEZTCD22	UNYSPUEZFCD22	

(1) From Concept M et PL7 junior
(2) From Concept M, PL7 junior, ProWORX NxT and ProWORX 32



Unity Pro is the common programming, debugging and operating software for the Premium, Atrium and Quantum ranges of PLCs. It is based on the standards set by PL7 and Concept software and provides a comprehensive set of new functions for greater productivity and openness to other software.

The five IEC61131-3 languages are supported as standard in Unity Pro with all the debugging functions, on the simulator or directly online with the PLC.

Thanks to independent symbolic memory variables, structured data and user function blocks, the application objects directly reflect the application-specific components of the automated process.

Using graphic libraries, the Unity Pro operator screens are configured in the application by the user. Operator access is simple and direct.

Debugging and maintenance are made simple by animated graphic objects.

For diagnostics, a display window provides a clear display in chronological order (time-stamped at source) of all system and application faults. The navigation function for finding the causes of faults traces missing conditions back to the source.

The standard XML Web format for exchanging data has been adopted as the source format for Unity applications. All or part of the application can be exchanged with other software in the project simply using the Import/Export function.

The converters integrated in Unity Pro automatically convert IEC 61131-3 PL7 and Concept standards and applications.

Unity software

Specialist tools

Software dedicated for integrators systems

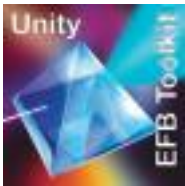
Type of software		Unity Pro XL Alliance	
Type of license version 2.2		Single (1 station)	Group (10 stations)
References	Software package	UNYSPUEFUAL22	UNYSPUEFTAL22
	Legacy upgrade	UNYSPUEZUAL22	UNYSPUEZTAL22
	Unity upgrade	UNYSPUQZUAL22	UNYSPUQTAL22
Type of software		PLC Suite Alliance V2.2	
Type of license version 2.2		Single (1 station)	Group (10 stations)
References	Software bundle	UNYSPUQFUAL22	UNYSPUQFTAL22

(1) For Concept, PL7 Junior, ProWORX.



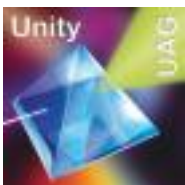
SFC View application diagnostic and monitoring software

Type of software		Unity SFC View		
Type of license version 2.0		Single (1 station)	Group (10 stations)	Site (100 stations)
References	Software package	UNYSDUMFUCD20	UNYSDUMFTCD20	UNYSDUMFFCD20



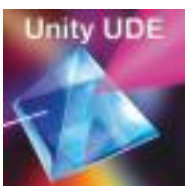
EF/EFB function development software in C language

Type of software		Unity EFB Toolkit	
Type of license		Single (1 station), english version (software and manual)	
References	Software package	UNYSPUZFUCD20E	
	Renewal	UNYCSPSPUZBU	



Software for designing and generating batch/process applications

Type of software		Unity UAG (Unity application generator)	
Type of license version 2.2		Single (1 station)	Site
References	Medium Software package	UAGSEWMFUCD22	UAGSEWMFFCD22
	Large Software package	UAGSEWLFUCD22	UAGSEWLFFCD22



Pack for developing specific solutions

Type of software		Unity UDE (Unity Developer's Edition)	
Type of license		Single (1 station)	
References	Software package	UNYUDEVFUCD20E	



PL7 is the common programming, debugging and operating software for the TSX Micro and Premium ranges of PLCs as well as Atrium coprocessors (see pages 3/12, 3/18 and 3/26).

PL7 offers 4 IEC languages: Instruction List (IL), Ladder Diagram (LD), Structured Text (ST) and Sequential Function Chart (SFC). You can use the most suitable language for each function in your application, making use of the multi-tasking structure of the processors.

For using application-specific functions, PL7 directly integrates the application-specific screens required for configuration and adjustment as well as supervisory and diagnostics activities.

Type of software		PL7 Micro for TSX Micro platform			
Type of license version 4.5		Single (1 station)	Single with SyCon V2.8	Group (3 stations)	Open Team (10 stations)
Reference	Software package (1)	TLXCDPL7MPPU45M	TLXCDPL7MPPC45M	TLXCD3PL7MPPU45M	TLXOTPL7MP45M
	Update (2)	TLXRCDPL7MP45M	TLXRCDPL7MPC45M	TLXRCD3PL7MP45M	–
		PL7 Junior for TSX Micro/Premium and Atrium coprocessor platforms			
Type of license version 4.5		Single (1 station)	Group (3 stations)		
Reference	Software package (1)	TLXCDPL7JPU45M	TLXCD3PL7JPU45M		
	Update (2)	TLXRCDPL7JP45M	TLXRC3DPL7JP45M		
	Upgrade (3)	TLXUCDPL7JP45M	TLXUCD3PL7JP45M		
		PL7 Pro for TSX Micro/Premium and Atrium coprocessor platforms			
Type of license version 4.5		Single (1 station)	Group (3 stations)	Open Team (10 stations)	Open Site
Reference	Software package (1)	TLXCDPL7PPU45M	TLXCD3PL7PPU45M	TLXOTPL7PP45M	TLXOSPL7PP45M
	Update (2)	TLXRCDPL7PP45M	TLXRCD3PL7PP45M	–	–
	Upgrade (3)	TLXUCDPL7PP45M	TLXUCD3PL7PP45M	–	–

(1) **PU** at the end of the reference: software package supplied with cable for USB port on PC, replace with **P** for cable for RS 232C port on PC.

(2) From the previous software version.

(3) From lower level, earlier version software.

Specialist tools

EF function development software in C language

Type of software	PL7 SDKC for EF function development software in C language
PL7 SDKC software extension	For PL7 Micro/Junior/Pro
Reference	TLXLSDKCPL741M

Development of applications in C language

Type of software	PL7 FUZ for processing process applications using fuzzy logic
PL7 FUZ software extension	For PL7 Micro/Junior/Pro, TSX Micro/Premium
Reference	TLXLPL7FUZ34M

Comparison of PL7 applications

Type of software	PL7 DIF for comparison of applications	
PL7 DIF software extension	For PL7 Pro, TSX Micro/Premium	
Type of license	Single (1 station)	Site (> 10 stations)
Reference	TLXCDPL7DIF42	TLXOSPL7DIF42

Availability of control systems based on Premium platforms

Type of software	Warm Standby redundant
Warm Standby software extension	For PL7 Junior/Pro
Type of license	Single (1 station)
Reference	TLXCDWSBYP40F / E

Programming software

For Modicon Quantum, Momentum



Concept is the IEC programming software for the Momentum and Quantum range of PLCs. It provides advanced Microsoft Windows based tools that deliver a multi-language development environment for control system programming.

Uses familiar, standardized editors, bundled in a single application to create and integrate PLC control, communication and diagnostic logic.

Five IEC editors give users the freedom to choose the programming language that fits their application requirements: Function Block Diagram (FBD), Ladder Diagram (LD), Sequential Function Chart (SFC), Structured Text (ST) and Instruction List (IL).

Type of software		Concept for Quantum/Momentum platforms			
Type of license version 2.6		Single (1 station)	Group (3 stations)	10 users (10 stations)	Site
Software references	Concept S	372SPU47101V26	–	–	–
	Concept M	372SPU47201V26	–	–	–
	Concept XL	372SPU47401V26	372SPU47411V26	372SPU47421V26	372SPU47431V26
Update references	Concept S (3)	372ESS47101	–	–	–
	Concept M (3)	372ESS47201	–	–	–
	Concept XL (3)	372ESS47401	372ESS47403	372ISS4740310	372ISS4741000

(3) From an earlier software version.

Specialist tools

EF/EFB function development software in C language

Type of software		Concept EFB Toolkit	
Type of license		Version 2.6	Upgrade version 2.6
Reference	Software package	332SPU47001V26	372ESS47001

Exploitation and service Concept software version

Type of software		Concept Application Loader	
Type of license		Version 2.6	
Reference	Software package	372SPU47701V26	

Software for designing and generating batch/process applications

Type of software		Unity UAG (Unity application generator)	
Type of license version 2.2		Single (1 station)	Site
Reference	Medium Software package	UAGSEWMFUCD22	UAGSEWMFFCD22
	Large Software package	UAGSEWLFUCD22	UAGSEWLFFCD22

SFC View application diagnostic and monitoring software

Type of software		Concept SFC View		
Type of license version 3.0		Single (1 station)	Group (10 stations)	Site (100 stations)
Reference		372SFV16000V30	372SFV16020V30	372SFV16030V30

ProWORX for Modicon Quantum, Momentum

ProWORX 32 is the flexible, easy-to-use cross-platform LL984-programming software for Modicon range PLCs. It gives you the power to program your Modicon controllers online or offline, manage your I/O subsystems, and analyze your plant's activity in real-time, all in a familiar Windows environment.

ProWORX 32 provides client/server capabilities to organize user-groups and -rights, store projects at a central location and realize office-plant floor bridging.

The project emulator provides the ability to test projects prior to running them in the PLC run-time environment to ensure your system will run at peak efficiency.

Type of software		ProWORX for Quantum/Momentum platforms			
Type of license version 2.0		Single (1 station)	Group (3 stations)	Multi-user (10 stations)	Site
Software references	ProWORX 32 Server	372SPU78001PSEV	–	–	–
	ProWORX 32 Suite	372SPU78001PSSV	–	–	–
	ProWORX 32 Client, Full Dev.	372SPU78001PDEV	372SPU78001PSTH	372SPU78001PSTE	372SPU78001SITE
	ProWORX 32 Online	372SPU78101PONL	–	–	–
	ProWORX 32 Lite	372SPU71001PLDV	372SPU71001PLTH	372SPU71001PLTE	–
Upgrade to ProWORX 32 references (4)		372SPU78401LPUP	372SPU78401LPSTH	372SPU78401LPSTE	–

(4) Only possible for customers, who are "up-to-date" with CSP (continuing support program)

Accessoires de raccordement : Consulter www.telemecanique.com

ProWORX³²

Modicon Momentum — Distributed I/O and processors

Discrete I/O modules



Type of module	Multibus discrete inputs			
Connection	By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)			
Input voltage	24 VDC	120 VAC	230 VAC	
Number of channels	16 (1 common point)	32 (2 common points)	16 (2 common points)	
Dimensions (WxDxH)	125 x 47.5 x 141.5 mm (with communication modules or processors) 144 x 70 x 141.5 mm (with M1/M1E processors and optional modules)			
Reference	170ADI34000	170ADI35000	170ADI54050	170ADI74050



Type of module		Multibus discrete outputs						
		Solid state			Triac			
Connection		By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)						
Output voltage		5...24 VAC, 24...230 VAC	24 VDC		120 VAC		230 VAC	
Number of protected channels		6 (1 common pt)	16 (2 common pts)	32 (2 common pts)	8 (2 common pts)	16 (2 common pts)	8 (2 common pts)	16 (2 common pts)
Output current	Per channel	5A	0,5 A	0,5 A	2 A	0,5 A	2 A	0,5 A
	Per group of channels	—	4 A	8 A	4 A	4 A	4 A	4 A
	Per module	21A	8 A	16 A	8 A	8 A	8 A	8 A
Dimensions (WxDxH)		125 x 47.5 x 141.5 mm (with communication modules or processors) 144 x 70 x 141.5 mm (with M1/M1E processors and optional modules)						
Reference		170ADO83030	170ADO34000	170ADO35000	170ADO53050	170ADO54050	170ADO73050	170ADO74050



Type of module		Multibus discrete I/O							
		Solid state					Relay		Triac
Connection		By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)							
Number of channels	Inputs	16 (1 common pt)	16 (4 com. pts)	16 (1 com. pt)	10 (1 common pt)				
	Input logic	Positive	Positive (1)	Negative	Positive			—	
	Outputs	16 (1 common pt)	16 (2 common pts)		8/4 (1 com. pt)	12	8 (2 common pts)		8 (1 com. pt)
Input voltage		12...48 VDC	24 VDC						120 VAC
Output voltage		12...48 VDC	24 VDC				24...230 VAC/20...115 VDC		120 VAC
Output current	Per output	0,5 A	0,5 A		2 A	0,5 A	2 A		0,5 A
	Per group of channels	—	4 A		4 A	4/2 A	8 A		4 A
	Per module	8 A	8 A		8 A	6 A	16 A		4 A
Dimensions (WxDxH)		125 x 47.5 x 141.5 mm (with communication modules or processors)							
		144 x 70 x 141.5 mm (with M1/M1E processors and optional modules)							
Reference		170ADM85010	170ADM35010	170ADM35015	170ADM37010	170ADM39010	170ADM39030	170ARM37030	170ADM69051

(1) For a version with high-speed positive logic, replace 0 at the end of the reference with 1. E.g. 170ADM35010 becomes 170ADM35011

Connection accessories: See www.telemecanique.com



Analog I/O modules



Type of module	Multibus analog inputs		
Connection	By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)		
Number of channels	8 isolated	16 with common point	4 isolated
Input signal	$\pm 5\text{ V}$, $\pm 10\text{ V}$, $\pm 20\text{ mA}$, 1...5 V, 4...20 mA	$\pm 5\text{ V}$, $\pm 10\text{ V}$, 4...20 mA	Multi-range $\pm 25\text{ mV}$, $\pm 10\text{ mV}$ (1)
Resolution	14 bits + sign, 15 bits unipolar	12 bits + sign	15 bits + sign
Dimensions (WxDxH)	125 x 47.5 x 141.5 mm (with communication modules or processors) 144 x 70 x 141.5 mm (with M1/M1E processors and optional modules)		
Reference	170AAI03000	170AAI14000	170AAI52040

(1) Temperature probe: Pt 100, Pt 1000, Ni 100, Ni 1000, Thermocouple: B, E, J, K, N, R, S, T.



Type of module		Multibus analog outputs		Analog I/O and multibus discrete I/O		
Connection		By screw terminals 140XTS00200 (to be ordered separately)				
Number of channels	Inputs	—		4 differential + 4 discrete	6 with com pt + 8 discrete (24 VDC)	
	Outputs	4		2 + 2 discrete (24VDC)	4 with com pt + 8 discrete (24 VDC)	
Input signal		± 10 V, 0...20 mA	± 10 V, 4...20 mA	± 5 V, ± 10 V, ± 20 mA, 1...5 V, 4...20 mA	0...10 V ± 10 V	
Output signal		—		± 10 V, 4...20 mA	0...10 V ± 10 V	
Resolution		12 bits + sign		12...14 bits dep. on signal	14 bits 14 bits	
Dimensions (WxDxH)		125 x 47.5 x 141.5 mm (with communication modules or processors) 144 x 70 x 141.5 mm (with M1/M1E processors and optional modules)				
Reference		170AAO12000	170AAO92100	170AMM09000	170ANR12090 170ANR12091	

Application-specific I/O modules



Type of module	High-speed counter	Discrete I/O with Modbus port
Type of inputs for	Incremental or absolute encoders	RS 485 Modbus port
Operating voltage	24 VDC	120 VAC
Counting frequency	200 kHz	—
Number of channels	2 independent	—
Number of discrete I/O	2 x 3 inputs/2 x 2 outputs	6 inputs/3 outputs
Dimensions (WxDxH)	125 x 47.5 x 141.5 mm (with communication modules or M1/M1E processors) 144 x 70 x 141.5 mm (with M1/M1E processors and optional modules)	
Reference	170AEC92000	170ADM54080

Modicon Momentum — Distributed I/O and processors

Communication modules



3	Type of module	Ethernet TCP/IP network		Fipio fieldbus	INTERBUS (1) fieldbus	Profibus DP fieldbus
	Speed	10 Mbps	10/100 Mbps	1 Mbps	0.5 Mbps	9.6 K...12 Mbps
	Manager PLC	—		Premium	-	-
	Redundancy	No		No	No	No
	Standard services	Modbus TCP/IP		—	—	—
	Reference	170ENT11002	170ENT11001	170FNT11001	170INT11000 (1)	170DNT11000

(1) Generation 4, twisted pair medium: **170INT11003**, with optical fiber medium: **170INT12000**



Type of module	Other networks		
	Modbus Plus		DeviceNet
	Speed	1 Mbps	0.5 Mbps
	Manager PLC	Premium or Quantum	Quantum
	Redundancy	No	Yes
	Standard services	—	—
	Reference	170PNT11020	170PNT16020

170LNT71000

Optional modules for M1/M1E processors



Type of module (1)	Modbus Plus		Asynchronous serial link
Communication ports	1 Modbus Plus	2 redundant Modbus Plus	1 RS 232/RS 485 Modbus
Real-time clock	Integrated, ± 13 sec/day accuracy		
Connection	By 9-way SUB-D connector		
Reference	172PNN21022	172PNN26022	172JNN21032

(1) Include save battery of the M1/M1E processors application and data memories.

Connection accessories

Type	RS 232C communication cable		
Length	1 m	3 m	6 m
Reference	110XCA28201	110XCA28202	110XCA28203



M1/M1E processors



Type of processor		M1				
Number of I/O	Discrete	2048 I/O			2048 I/2048 Q	8192 I/O
	Registers	2048 words			4096 words	26048 words
Integrated communication ports	Modbus	1 RS 232C	1 RS 232C + 1 RS 485	1 RS 232C	1 RS 232C + 1 RS 485	
	Ethernet TCP/IP	–				
	I/O bus (1)	–			1 I/O port	–
Transparent Ready	Embedded Web server	–				
Memory capacity	RAM	64 Kb			256 Kb	512 Kb
	Flash	256 Kb			256 Kb	512 Kb
	User, 984 LL language (2)	2.4 K			12 K	18 K
	User, IEC language (3)	–			160 K	240 K
	Data	2 K			4 K	24 K
Cycle time		1 ms/K	0.63 ms/K	1 ms/K	0.63 ms/K	1 ms/K
Reference		171CCS70000	171CCS70010	171CCS78000	171CCS76000	171CCC78010

(1) I/O bus derived from InterBus bus.

(2) ProWORX 32 or Concept programming software.

(3) Concept programming software.



Type of processor		M1	M1E			
Number of I/O	Discrete	8192 I/O				
	Registers	26048 words				
Integrated communication ports	Modbus	1 RS 232C	1 RS 485	–		
	Ethernet TCP/IP	–	1 integrated Ethernet port		1 I/O port	
	I/O bus (1)	1 I/O port	–			
Transparent Ready	Embedded Web server	–	Standard services (class A10)			
Memory capacity	RAM	512 Kb	544 Kb			
	Flash	512 Kb	1 Mb	512 Kb	1 Mb	
	User, 984 LL language (2)	18 K				
	User, IEC language (3)	240 K	–	200 K	–	200 K
	Data	24 K				
Cycle time		1 ms/K	0.3 ms/K			
Reference		171CCC76010	171CCC98020	171CCC98030	171CCC96020	171CCC96030

Power supply module⁽⁴⁾



Type of power supply module for	Momentum processors
Input voltage	120 or 230 VAC (selected by jumper)
Output voltage	24 VDC
Output current	0.7 A
Dimensions (WxDxH)	73 x 44.5 x 146 mm
Reference	170CPS11100

(4) Process power supplies see chapter 6 "Power supply"

The motion and drives response

Altistart, Altivar

The *simplicity* of a complete offer

For *each application*, a *solution* in soft starting and variable speed

Simple machines
>>> *compact*



Starters
Altistart 01
■ 0,37 to 75 kW



Drives
Altivar 11
■ 0,18 to 2,2 kW



Drives
Altivar 31
■ 0,18 to 15 kW

Pumping and ventilation machines
>>> *tailor-made*



Starters
Altistart 48
■ 4 to 1 200 kW



Drives
Altivar 21
■ 0,75 to 30 kW



Drives
Altivar 61
■ 0,37 to 630 kW

Complex machines,
high power
>>> *high performance*



Drives
Altivar 71
■ 0,37 to 500 kW

Lexium

High-performance motion control

Lexium has added to its Telemecanique motion control offer by offering Lexium 05 drives for servo motors, available in four sizes. Combined with motors in the BSH series, this new range provides compact drive solutions ranging in power from 0.4 to 6 kW.

Complete offer for general *motion control*.



Lexium 05 drives from 4 A to 25 A
■ Lexium 05 operates in either torque or speed control mode by means of its ± 10 V analog interface. Its encoder interface also performs the function of an electronic gearbox.



Lexium 17D drives from 1.5 A to 20 A and 40 A to 70 A
■ High-technology digital drives for brushless motors.
■ "All in one" concept integrating: EMC filters, braking resistors (reduction in system cost and dimensions), simple indexer and built-in transmission for simple applications.



Motors
4 ranges:
BSH from 0.5 to 36 Nm
BPL from 1.1 to 5.4 Nm
BPH from 0.4 to 100 Nm
SER from 1.1 to 13.4 Nm

The essentials
A simplified selection guide to help you quickly select your motion control products.

Contents

PowerSuite 2 :

Software programme, you can configure all Altistart starters and all Altivar drives.

Customise your settings with **the minimum of effort!**

- Simplified definition of the parameters
- Preparation and printing out of the configurations
- Comparison of files
- Quick reproduction of settings on all similar applications
- Remote monitoring, etc.



Wide variety of control architectures:

- Fieldbus: FIPIO, CanOpen (native), Modbus Plus, Profibus DP
- SERCOS®: high-technology fully digital motion with Premium or Quantum processing

4 motor ranges are associated with the drives:

■ BSH servo motors from 0.5 to 36 Nm:

- > Compact servomotors with low inertia
- > Extensive speed range from 1500 to 8000 min⁻¹
- > IP40 or IP65 protection, brake, single turn or multiturn SinCos encoder
- > Straight or right angle connectors

■ BPL and BPH motors from 0.4 to 100 Nm:

- > Brushless motors with high torque-inertia ratio
- > Extensive power range: 0.4 to 100 Nm continuous operation, 1 to 230 Nm peak operation
- > IP67 protection, brake, high-resolution SinCos feedback

■ SER motors from 0.3 to 13.4 Nm:

- > Specially adapted to the needs of OEMs
- > Wide power range: 1.1 to 13.4 Nm continuous operation, 2.5 to 38 Nm peak operation. High-resolution SinCos feedback as standard
- > IP 56 protection, brake, etc

Soft starters and variable speed drives

Altistart / Altivar selection guide	4/2 and 4/3
■ Soft starters Altistart 01	4/4 and 4/5
■ Soft starters Altistart 48	4/6 and 4/7
■ Variable speed drives Altivar 11	4/8 and 4/9
■ Variable speed drives Altivar 21	4/10 and 4/11
■ Variable speed drives Altivar 31	4/12 and 4/13
■ Variable speed drives Altivar 61	4/14 to 4/21
■ Variable speed drives Altivar 71	4/22 to 4/29
■ Dialogue and communication	4/30 to 4/33

Motion modules and servo drives

- Application-specific motion control modules for Modicon Premium and Quantum platform 4/34 and 4/35
- **Lexium 05** drives for BSH servo motors 4/36 to 4/41
- **Lexium 17D** drives for SER, BPH and BPL servo motors 4/42 to 4/49



Selection guide

Type of machine

Simple machines



Starters/drives

Variable speed drives
Soft starters and soft
start/soft stop units

Altistart 01



Altivar 11



Altivar 31



Supply voltage ranges for 50/60 Hz line supply

Single phase 110...480 V
Three phase 110...690 V

Single phase 100...120 V
Single phase 200...240 V
Three phase 200...230 V

Single phase 200...240 V
Three phase 200...240 V
Three phase 380...500 V
Three phase 525...600 V

Motor power

Drive

Output frequency

0.37...75 kW

—

0.18...2.2 kW

0.5...200 Hz

0.18...15 kW

0.5...500 Hz

Type of control Asynchronous motor

—

Sensorless flux vector control

Synchronous motor

—

—

—

Transient overtorque

—

150...170% of torque
nominal motor

170...200% of the nominal motor torque

Functions

Number of functions

1

26

50

Number of preset speeds

—

4

16

Number
of I/O

Analog inputs

—

1

3

Logic inputs

3

4

6

Analog outputs

—

—

1

Logic outputs

1

1

—

Relay outputs

1

1

2

Communication

Integrated

—

—

Modbus and CANopen

Available as an option

Combined with TeSys model U
starter-controller

—

DeviceNet, Ethernet TCP/IP,
Fipio, Profibus DP

Cards (available as an option)

—

—

—

Standards and certifications

IEC/EN 60947-4/2
C-TICK - CSA - UL
CE - CCC

EN 50178, EN 61800-3
EN 55011 - EN 55022
class B and class A gr.1
NOM 117 - C-TICK - CSA
UL - N998 - CE

EN 50178, EN 61800-3
EN 55011 - EN 55022:
class A, class B
with option
C-TICK - UL - N998 - CE - CSA

pages 4/4-4/5

pages 4/8-4/9

pages 4/12-4/13

Pumping and ventilation machines



Complex, high-power machines



Soft start/soft stop units

Variable speed drives
Building (HVAC) (1)

Industry

Variable speed drives

Altistart 48



Altivar 21



Altivar 61



Altivar 71



Three phase 230...415 V
Three phase 208...690 V

Three phase 200...240 V
Three phase 380...480 V

Single phase 200...240 V
Three phase 200...240 V
Three phase 380...480 V

Single phase 200...240 V
Three phase 200...240 V
Three phase 380...480 V

4...1200 kW
–

0.75...30 kW
0.5...200 Hz

0.37...630 kW
0.5...1600 Hz up to 37 kW
0.5...500 Hz from 45 to 630 kW

0.37...500 kW
0.1...1600 Hz up to 37 kW
0.1...500 Hz from 45 to 500 kW

TCS
(Torque Control System)

kn² quadratic ratio, sensorless flux vector control, voltage/frequency ratio (2 or 5 points), energy saving ratio

kn² quadratic ratio, flux vector control with or without sensor, voltage/frequency ratio (2 or 5 points), energy saving ratio

Flux vector control with or without sensor, voltage/frequency ratio (2 or 5 points), ENA System

–

–

–

Vector control without speed feedback

–

Transient overload: 110% of the nominal drive current for 60 seconds

Transient overload: 110...120% of the nominal drive current for 60 seconds

200% of the nominal motor torque for 2 s
170% for 60 seconds

36

50

> 150

> 150

–

8

16

16

1 PTC probe

2

2...4

2...4

4

3

6...20

6...20

1

1

1...3

1...3

2

–

0...8

0...8

3

2

2...4

2...4

Modbus

Modbus

Modbus and CANopen

Modbus and CANopen

DeviceNet, Ethernet TCP/IP, Fipio, Profibus DP

LonWorks, METASYS N2, APOGEE FLN, BACnet

Ethernet TCP/IP, Fipio, Modbus Plus, INTERBUS, Profibus DP, Modbus/Uni-Telway, DeviceNet, LonWorks, METASYS N2, APOGEE FLN, BACnet

Ethernet TCP/IP, Modbus/Uni-Telway, Fipio, Modbus Plus, Profibus DP, DeviceNet, INTERBUS

–

–

I/O extension cards
"Controller Inside" programmable card, multi-pump cards

Encoder interface card
I/O extension card
"Controller Inside" programmable card

IEC/EN 60947-4-2
EMC class A and B
DNV - C-TICK - GOST
CCIB - NOM - UL - CE
CCC - CSA

EN 50178, IEC/EN 61800-3
EN 55011, EN 55022:
class A, class B with option
CE, UL, C-Tick, N998

IEC/EN 61800-5-1,
IEC/EN 61800-3 (environments 1 and 2, C1 to C3)
EN 55011, EN 55022,
IEC/EN 61000-4-2/4-3/4-4/4-5/4-6/4-11
CE, UL, CSA, DNV, C-Tick, NOM 117, GOST

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(1) Heating Ventilation Air Conditioning

Dimensions (in mm)		width x height x depth
ATS01	N103FT/N106 FT	22.5 x 100 x 100
	N109FT/N112 FT/N125 FT	45 x 124 x 130
	N206●●/N209●● / N212●●	
	N222●●/N232●●	45 x 154 x 130



Type of starter						Soft starters	Soft start/soft stop units			
Motor power						0.37 to 11 kW	0.75 to 15 kW			
Degree of protection						IP20				
Peak current reduction						No (1 controlled phase)	Yes (2 controlled phases)			
Adjustable starting time						1...5 s	1...10 s			
Adjustable stopping time						No: freewheel stop	Yes: 1... 10 s.			
Adjustable starting torque						30...80% of DOL motor starting torque				
Logic inputs						–	3 logic inputs (start, stop and startup boost)			
Logic outputs						–	1 logic output			
Relay outputs						–	1 relay output			
Control supply voltage						110... 240 VAC ± 10%, 24 VDC ± 10%	Built into the starter			
Supply voltage						Single phase 110...230 V				
Motor power										
230 V			Nominal current							
kW			(IcL)							
0.37			3 A			ATS01N103FT				
0.75			6 A			ATS01N106FT				
1.1			9 A			ATS01N109FT				
1.5			12 A			ATS01N112FT				
2.2			25 A			ATS01N112FT				
Supply voltage						Three phase 110...230 V	Three phase 200...240 V	Three phase 380...415 V	Three phase 440...480 V	
Motor power										
210 V		230 V		400 V		460 V		Nominal current		
HP	kW	HP	kW	HP	kW	HP	(IcL)			
–	0.37-0.55	0.5/–	1.1	0.5-1.5	3 A	ATS01N103FT	–	–	–	
0.5	0.75-1.1	1-1.5	2.2-3	2-3	6 A	ATS01N106FT	ATS01N206LU	ATS01N206QN	ATS01N206RT	
1	1.5	2	4	5	9 A	ATS01N109FT	ATS01N209LU	ATS01N209QN	ATS01N209RT	
1.5	2.2	3	5.5	7.5	12 A	ATS01N112FT	ATS01N212LU	ATS01N212QN	ATS01N212RT	
–	4-5.5	5-7.5	7.5-11	10-15	22 A	–	ATS01N222LU	ATS01N222QN	ATS01N222RT	
2-3	3-4-5.5	5-7.5	7.5-9-11	10-15	25A	ATS01N112FT	–	–	–	
–	7,5	10	15	20	32 A	–	ATS01N232LU	ATS01N232QN	ATS01N232RT	

Starters



Dimensions (in mm)		width x height x depth
ATS01	N230●●/N244●●	180 x 146 x 126
	N272●●/N285●●	180 x 254.5 x 126

Type of starter							Soft start/soft stop units	
Motor power							15 to 75 kW	
Degree of protection							IP20 on front panel	
Peak current reduction							Yes	
Adjustable starting and stopping times							1... 25 s	
Adjustable starting torque							30... 80% of DOL motor starting torque	
Logic inputs							2 logic inputs (run and stop)	
Relay outputs							1 relay output	
Control supply voltage							110 VDC ± 10%	Built into the starter
Supply voltage							Three phase 230...690 V	
Motor power							Three phase 400 V	
230 V		400 V		460 V	690 V	Nominal current		
kW	HP	kW	HP	HP	kW	(IcL)		
7.5	10	15	15	20	30	32 A	ATS01N230LY	—
11	15	22	25	30	37	44 A	ATS01N244LY	ATS01N244Q
18.5	25	37	40	50	55	72 A	ATS01N272LY	ATS01N272Q
22	30	45	50	60	75	85 A	ATS01N285LY	ATS01N285Q

Starters with TeSys model U



Dimensions (in mm)		width x height x depth
ATSU01	N206LT/N209LT/N212LT	45 x 124 x 130
	N222LT/N232LT	45 x 154 x 130

Type of starter						Soft start/soft stop units		
Motor power						0.75 to 15 kW		
Degree of protection						IP20		
Peak current reduction						Yes		
Adjustable starting and stopping times						1...10 s		
Adjustable starting torque						30... 80% of DOL motor starting torque		
Logic inputs						3 logic inputs (start, stop and startup boost)		
Logic outputs						1 logic output		
Relay outputs						1 relay output		
Control supply voltage						Built into the starter		
References						Soft start/soft stop units	TeSys model U starter-controller	Power connector
							Power base	Control unit (1)
								between ATSU and TeSys model U
Supply voltage						Three phase 200...480 V		
Motor power								
230 V		400 V	460 V	Nominal current				
kW	HP	kW	HP	(IcL)				
0.75	1	1.5	2	6 A		ATSU01N206LT	LUB12	LUC●05BL
1.1	1.5	2.2	3	6 A		ATSU01N206LT	LUB12	LUC●12BL
1.5	2	3	—	9 A		ATSU01N209LT	LUB12	LUC●12BL
—	—	4	5	9 A		ATSU01N209LT	LUB12	LUC●12BL
2.2	3	—	—	12		ATSU01N212LT	LUB12	LUC●12BL
3	—	5.5	7.5	12 A		ATSU01N212LT	LUB32	LUC●18BL
4	5	7.5	10	22 A		ATSU01N222LT	LUB32	LUC●18BL
5.5	7.5	11	15	22 A		ATSU01N222LT	LUB32	LUC●32BL
7.5	10	15	20	32 A		ATSU01N232LT	LUB32	LUC●32BL

(1) To compose your reference, replace ● in the reference with: «A» for a standard control unit, «M» for a multifunction unit and «B» for an advanced unit.

Dimensions (in mm)		width x height x depth	
ATS48	D17Q to D47Q	Size A:	160 x 275 x 190
	D62Q to C11Q	Size B:	190 x 290 x 235
	C14Q to C17Q	Size C:	200 x 340 x 265
	C21Q to C32Q	Size D:	320 x 380 x 265
	C41Q to C66Q	Size E:	400 x 670 x 300
	C79Q to M12Q	Size F:	770 x 890 x 315



Supply voltage			Three phase 230...415 V ⁽¹⁾			
Type of application			Standard		Severe ⁽²⁾	
Starter control supply voltage			220...415 V			
Protection	Degree of protection		IP20: ATS48D17● to ATS48C11● starters IP00: ATS48C14● to ATS48M12● starters			
	Motor thermal protection		Class 10		Class 20	
EMC	Class A		On all starters			
	Class B		On all starters up to 170 A			
Starting mode			Torque control (patented TCS: Torque Control System)			
I/O	Analog inputs		1 PTC probe			
	Logic inputs		4 logic inputs, 2 of which are configurable			
	Logic outputs		2 configurable logic outputs			
	Analog outputs		1 analog output			
	Relay outputs		3 relay outputs, 2 of which are configurable			
Dialogue			Integrated or remote display terminal, or PowerSuite software workshop ⁽³⁾			
Communication ⁽⁴⁾	Integrated		Modbus			
	Available as an option		DeviceNet, Ethernet TCP/IP, Fipio, Profibus DP			
Motor power						
230 V	400 V	Nominal current				
kW	kW	(IcL)				
3	5.5	12 A	–		ATS48D17Q	Size A
4	7.5	17 A	ATS48D17Q	Size A	ATS48D22Q	Size A
5.5	11	22 A	ATS48D22Q	Size A	ATS48D32Q	Size A
7.5	15	32 A	ATS48D32Q	Size A	ATS48D38Q	Size A
9	18.5	38 A	ATS48D38Q	Size A	ATS48D47Q	Size A
11	22	47 A	ATS48D47Q	Size A	ATS48D62Q	Size B
15	30	62 A	ATS48D62Q	Size B	ATS48D75Q	Size B
18.5	37	75 A	ATS48D75Q	Size B	ATS48D88Q	Size B
22	45	88 A	ATS48D88Q	Size B	ATS48C11Q	Size B
30	55	110 A	ATS48C11Q	Size B	ATS48C14Q	Size C
37	75	140 A	ATS48C14Q	Size C	ATS48C17Q	Size C
45	90	170 A	ATS48C17Q	Size C	ATS48C21Q	Size D
55	110	210 A	ATS48C21Q	Size D	ATS48C25Q	Size D
75	132	250 A	ATS48C25Q	Size D	ATS48C32Q	Size D
90	160	320 A	ATS48C32Q	Size D	ATS48C41Q	Size E
110	220	410 A	ATS48C41Q	Size E	ATS48C48Q	Size E
132	250	480 A	ATS48C48Q	Size E	ATS48C59Q	Size E
160	315	590 A	ATS48C59Q	Size E	ATS48C66Q	Size E
–	355	660 A	ATS48C66Q	Size E	ATS48C79Q	Size F
220	400	790 A	ATS48C79Q	Size F	ATS48M10Q	Size F
250	500	1000 A	ATS48M10Q	Size F	ATS48M12Q	Size F
355	630	1200 A	ATS48M12Q	Size F	–	

(1) Possible to connect the starter in the motor delta connection

(2) Starting time greater than 30 seconds (fans, high inertia machines and compressors)

(3) (4) PowerSuite software and communication protocols, see page 4/30

Accessory



Accessory	Remote display terminal
Reference	VW3G48101

Soft start/soft stop units

Dimensions (in mm)		width x height x depth
ATS48	D17Y to D47Y	Size A: 160 x 275 x 190
	D62Y to C11Y	Size B: 190 x 290 x 235
	C14Y to C17Y	Size C: 200 x 340 x 265
	C21Y to C32Y	Size D: 320 x 380 x 265
	C41Y to C66Y	Size E: 400 x 670 x 300
	C79Y to M12Y	Size F: 770 x 890 x 315



Supply voltage												Three phase 208...690 V ⁽¹⁾			
Type of application												Standard		Severe ⁽²⁾	
Starter control supply voltage												110...230 V			
Characteristics												Identical to 230...415 V starters			
Motor power											Nominal				
208 V	230 V	460 V	575 V	230 V	400 V	440 V	500 V	525 V	660 V	690 V	current				
HP				kW							(IcL)				
2	3	7.5	10	3	5.5	5.5	7.5	7.5	9	11	12 A	–	ATS48D17Y		Size A
3	5	10	15	4	7.5	7.5	9	9	11	15	17 A	ATS48D17Y	Size A	ATS48D22Y	Size A
5	7.5	15	20	5.5	11	11	11	11	15	18.5	22 A	ATS48D22Y	Size A	ATS48D32Y	Size A
7.5	10	20	25	7.5	15	15	18.5	18.5	22	22	32 A	ATS48D32Y	Size A	ATS48D38Y	Size A
10	–	25	30	9	18.5	18.5	22	22	30	30	38 A	ATS48D38Y	Size A	ATS48D47Y	Size A
–	15	30	40	11	22	22	30	30	37	37	47 A	ATS48D47Y	Size A	ATS48D62Y	Size B
15	20	40	50	15	30	30	37	37	45	45	62 A	ATS48D62Y	Size B	ATS48D75Y	Size B
20	25	50	60	18.5	37	37	45	45	55	55	75 A	ATS48D75Y	Size B	ATS48D88Y	Size B
25	30	60	75	22	45	45	55	55	75	75	88 A	ATS48D88Y	Size B	ATS48C11Y	Size B
30	40	75	100	30	55	55	75	75	90	90	110 A	ATS48C11Y	Size B	ATS48C14Y	Size C
40	50	100	125	37	75	75	90	90	110	110	140 A	ATS48C14Y	Size C	ATS48C17Y	Size C
50	60	125	150	45	90	90	110	110	132	160	170 A	ATS48C17Y	Size C	ATS48C21Y	Size D
60	75	150	200	55	110	110	132	132	160	200	210 A	ATS48C21Y	Size D	ATS48C25Y	Size D
75	100	200	250	75	132	132	160	160	220	250	250 A	ATS48C25Y	Size D	ATS48C32Y	Size D
100	125	250	300	90	160	160	220	220	250	315	320 A	ATS48C32Y	Size D	ATS48C41Y	Size E
125	150	300	350	110	220	220	250	250	355	400	410 A	ATS48C41Y	Size E	ATS48C48Y	Size E
150	–	350	400	132	250	250	315	315	400	500	480 A	ATS48C48Y	Size E	ATS48C59Y	Size E
–	200	400	500	160	315	355	400	400	560	560	590 A	ATS48C59Y	Size E	ATS48C66Y	Size E
200	250	500	600	–	355	400	–	–	630	630	660 A	ATS48C66Y	Size E	ATS48C79Y	Size F
250	300	600	800	220	400	500	500	500	710	710	790 A	ATS48C79Y	Size F	ATS48M10Y	Size F
350	350	800	1000	250	500	630	630	630	900	900	1000 A	ATS48M10Y	Size F	ATS48M12Y	Size F
400	455	1000	1200	355	630	710	800	800	–	–	1200 A	ATS48M12Y	Size F	–	

(1) Starter connection in the motor delta connection: add "S316" at the end of the reference

Line chokes



Degree of protection			IP20	IP00
References	Starter	ATS48	D17●	D75● to C14●
	Choke		VZ1L015UM17T	VZ1L150U170T
	Type of starter	ATS48	D22●	C17● to C25●
	Choke		VZ1L030U800T	VZ1L0250U100T
	Type of starter	ATS48	D32● and D38●	AC32●
	Choke		VZ1L040U600T	VZ1L325U075T
	Type of starter	ATS48	D47● and D62●	–
	Choke		VZ1L070U350T	
				C41● to C48●
				VZ1L530U045T
				C59● to M10●
				VZ1LM10U024T
				M12●
				VZ1LM14U016T



Dimensions (in mm)	width x height x depth (1)
Size 1	: 72 x 142 x 101/Size 2: 72 x 142 x 125
Size 3	: 72 x 142 x 138/Size 4: 117 x 142 x 156

Range			Europe		America		Asia	
Output frequency			0.5...200 Hz					
Type of control			Sensorless flux vector control					
Speed range			1 to 20					
Degree of protection			IP20					
I/O	Analog inputs		1 configurable analog input					
	Logic inputs		4 assignable logic inputs					
	Outputs		1 PWM open collector output or assignable as logic output					
	Relay outputs		1 protected relay logic output					
Dialogue			Integrated display terminal or PowerSuite software workshop (2)					
EMC			Integrated class B filter		External filter available as an option		External filter available as an option	
Local controls (3)/Negative logic			No		No		Yes	
Standard NEC 208 V 1999			No		Yes		No	
Supply voltage			Single phase 100...120 V					
Motor power	kW/HP	0.18/0.25	–		ATV11HU05F1U	Size 1	ATV11HU05F1A	Size 1
		0.37/0.5	–		ATV11HU09F1U	Size 2	ATV11HU09F1A	Size 2
		0.75/1	–		ATV11HU18F1U	Size 4	ATV11HU18F1A	Size 4
Supply voltage			Single phase 200...240 V					
Motor power	kW/HP	0.18/0.25	ATV11HU05M2E	Size 1	ATV11HU05M2U	Size 1	ATV11HU05M2A	Size 1
		0.37/0.5	ATV11HU09M2E	Size 2	ATV11HU09M2U	Size 2	ATV11HU09M2A	Size 2
		0.55	ATV11HU12M2E	Size 3	–	–	–	–
		0.75/1	ATV11HU18M2E	Size 3	ATV11HU18M2U	Size 3	ATV11HU18M2A	Size 3
		1.5/2	ATV11HU29M2E	Size 4	ATV11HU29M2U	Size 4	ATV11HU29M2A	Size 4
		2.2/3	ATV11HU41M2E	Size 4	ATV11HU41M2U	Size 4	ATV11HU41M2A	Size 4
Supply voltage			Three phase 200...230 V					
Motor power	kW/HP	0.18/0.25	–		ATV11HU05M3U	Size 1	ATV11HU05M3A	Size 1
		0.37/0.5	–		ATV11HU09M3U	Size 2	ATV11HU09M3A	Size 2
		0.75/1	–		ATV11HU18M3U	Size 3	ATV11HU18M3A	Size 3
		1.5/2	–		ATV11HU29M3U	Size 4	ATV11HU29M3A	Size 4
		2.2/3	–		ATV11HU41M3U	Size 4	ATV11HU41M3A	Size 4

(1) Asia range: Add 7 mm to depth (height of the potentiometer)

(2) PowerSuite software, see page 4/30

(3) Local controls: Run/Stop keys and potentiometer

Drives on base plate



Dimensions (in mm)	width x height x depth (1)
1 size:	72 x 142 x 101

Range			Europe	America	Asia
Supply voltage			Single phase 100...120 V		
Motor power	kW/HP	0.37/0.5	–	ATV11PU09F1U	ATV11PU09F1A
Supply voltage			Single phase 200...240 V		
Motor power	kW/HP	0.37/0.5	ATV11PU09M2E	ATV11PU09M2U	ATV11PU09M2A
		0.55	ATV11PU12M2E	–	–
		0.75/1	ATV11PU18M2E	ATV11PU18M2U	ATV11PU18M2A
Supply voltage			Three phase 200...230 V		
Motor power	kW/HP	0.37/0.5	–	ATV11PU09M3U	ATV11PU09M3A
		0.75/1	–	ATV11PU18M3U	ATV11PU18M3A

(1) Asia range: Add 7 mm to depth (height of the potentiometer)

Additional EMC input filters



Supply voltage			Single phase 100...120 V	200...240 V	Three phase 200...230 V
Europe range	Drive	ATV11	–	HU05M2E to HU41M2E	–
	References	Filters	–	Integrated	–
America range	Drive	ATV11	HU05F1U, HU09F1U	HU05M2U to HU18M2U	HU05M3U to HU18M3U
	References	Filters	VW3A11401	VW3A11401	VW3A11403
	Drive	ATV11	HU18F1U	HU29M2U - HU41M2U	HU29M3U to HU41M3U
	References	Filters	VW3A11402	VW3A11402	VW3A11404
Asia range	Drive	ATV11	HU05F1A - HU09F1A	HU05M2A to HU18M2A	HU05M3A to HU18M3A
	References	Filters	VW3A11401	VW3A11401	VW3A11403
	Drive	ATV11	HU18F1A - HU18F1A	HU29M2A - HU41M2A	HU29M3A to HU41M3A
	References	Filters	VW3A11402	VW3A11402	VW3A11404

Accessories



Accessory			Mounting plates for Omega rail		Substitution plate	Speed reference potentiometer	Plate for EMC mounting
Description			Width 35 mm		For replacing ATV08	2.2 kΩ	
References	Drive	ATV11	HU05●●● HU09●●● HU12M2● HU18●●	HU18F1● HU29●●● HU41●●● –	HU05M2● ●HU09M2●● ●U12M2E ●U18M2●	All ATV11 models	All ATV11 models
	Accessories		VW3A11851	VW3A11852	VW3A11811	SZ1RV1202	VW3A11831

Braking resistors and modules...other accessories: Please consult www.Telemecanique.com.



Dimensions (in mm)	width x height x depth
S1: 105 x 130 x 150	S4: 245 x 310 x 190
S2: 140 x 170 x 150	S5: 240 x 420 x 210
S3: 180 x 220 x 170	S6: 320 x 630 x 290

Drive			Three phase					
Supply voltage			200...240 V		380...480 V			
Degree of protection			IP21 and IP41 on the upper part					
Output frequency			0.5...200 Hz					
Type of control			kn²quadratic ratio, sensorless flux vector control, voltage/frequency ratio (2 or 5 points), energy saving ratio					
Speed range			1 to 10					
I/O	Analog inputs		1 switch-configurable current or voltage analog input, and 1 voltage analog input configurable as a PTC probe input					
	Logic inputs		3 programmable logic inputs					
	Analog outputs		1 switch-configurable current or voltage analog output					
	Relay outputs		2 relay logic outputs					
Dialogue			Integrated display terminal with local controls (2) or remote display terminal or PC software (see page 4/11)					
Communication			Modbus RTU					
(see page 4/11)			Available as an option					
EMC			Class A		External filter available as an option			
			Class B		External filter available as an option			
Motor power			kW/HP	0.75/1	ATV21H075M3X	S1	ATV21H075N4	S1
				1.5/2	ATV21HU15M3X	S1	ATV21HU15N4	S1
				2.2/3	ATV21HU22M3X	S1	ATV21HU22N4	S1
				3/–	ATV21HU30M3X	S2	ATV21HU30N4	S2
				4/5	ATV21HU40M3X	S2	ATV21HU40N4	S2
				5.5/7.5	ATV21HU55M3X	S3	ATV21HU55N4	S2
				7.5/10	ATV21HU75M3X	S3	ATV21HU75N4	S3
				11/15	ATV21HD11M3X	S4	ATV21HD11N4	S3
				15/20	ATV21HD15M3X	S4	ATV21HD15N4	S4
				18.5/25	ATV21HD18M3X	S4	ATV21HD18N4	S4
				22/30	ATV21HD22M3X	S5	ATV21HD22N4	S5
				30/40	ATV21HD30M3X	S6	ATV21HD30N4	S6

(1) Heating Ventilation Air Conditioning

(2) Drive with local controls, Run/Stop, Loc/Rem. keys

IP54 drives



Dimensions (in mm)	width x height x depth
S1: 215 x 297 x 192	S4: 310 x 665 x 315
S2: 230 x 340 x 208	S5: 284 x 720 x 315
S3: 290 x 560 x 315	

Drive			Three phase			
Supply voltage			200...240 V		380...480 V	
Degree of protection			IP54			
Description			IP54 drive available in two manufacturing variants, ATV21W...N4 class A or ATV21W...N4C class B			
EMC	Class A		Integrated class A filter		–	
	Class B		–		Integrated class B filter	
Motor power	kW/HP	0.75/1	ATV21W075N4	S1	ATV21W075N4C	S1
		1.5/2	ATV21WU15N4	S1	ATV21WU15N4C	S1
		2.2/3	ATV21WU22N4	S2	ATV21WU22N4C	S2
		3/–	ATV21WU30N4	S2	ATV21WU30N4C	S2
		4/5	ATV21WU40N4	S2	ATV21WU40N4C	S2
		5.5/7.5	ATV21WU55N4	S2	ATV21WU55N4C	S2
		7.5/10	ATV21WU75N4	S2	ATV21WU75N4C	S2
		11/15	ATV21WD11N4	S3	ATV21WD11N4C	S3
		15/20	ATV21WD15N4	S3	ATV21WD15N4C	S3
		18.5/25	ATV21WD18N4	S4	ATV21WD18N4C	S4
		22/30	ATV21WD22N4	S5	ATV21WD22N4C	S5
		30/40	ATV21WD30N4	S5	ATV21WD30N4C	S5

Additional EMC input filters



Supply voltage			Three phase 200...240 V			380...480 V		
Maximum length of shielded cable m (1)			Class A		Class B	Class A		Class B
References	Type of drive	ATV21	H075M3X to HU22M3X	50 m	20 m	H075N4 to HU22N4	50 m	20 m
	Filters		VW3A31404			VW3A31404		
	Type of drive	ATV21	HU30M3X and HU40M3X	80 m	50 m	HU30N4 to HU55N4	50 m	20 m
	Filters		VW3A31406			VW3A31406		
	Type of drive	ATV21	HU55M3X and HU75M3X	80 m	50 m	HU75N4 and HD11N4	50 m	20 m
	Filters		VW3A31407			VW3A31407		
	Type of drive	ATV21	HD11M3X to HD18M3X	50 m	1 m	HD15N4 and HD18N4	50 m	20 m
Filters		VW3A31408			VW3A31409			
Type of drive	ATV21	HD22M3X	100 m	25 m	HD22N4 and HD30N4	200 m	100 m	
Filters		VW3A4406			VW3A4406			
Type of drive	ATV21	HD30M3X	100 m	25 m	–			
Filters		VW3A4408						

(1) Maximum lengths for shielded cables connecting motors to drives for a switching frequency of 6 to 16 kHz

Communication cards

Type	LonWorks		METASYS N2	APOGEE FLN	BACnet
Structure	Connector	1 removable 3-way screw terminal	1 removable 4-way screw terminal	1 removable 4-way screw terminal	1 removable 4-way screw terminal
	Topology	TP/FT-10 (free topology)	–	–	–
	Transmission speed	78 Kbps	–	–	–
Diagnostics	With LEDs	1 LED on the card: "Service"	1 LED on the card: "COM" (network traffic)		
	Using the graphic display terminal	Command word received/reference received			
Description file	xif file supplied on CD-ROM		–	–	–
Reference	VW3A21312		VW3A21313	VW3A21314	VW3A21315

Remote display terminal

Description	The Altivar 21 drive can be connected to a remote display terminal. The display terminal can be mounted on the door of an enclosure with IP54 protection on the front panel. Max. operating temperature: 40°C Supplied with: – 1 cable with 2 RJ45 connectors, length 3.6 m – Seal and screws for IP54 mounting on an enclosure door
Reference	VW3A21101

Connection accessories

Modbus bus	Splitter box	Cables (L = 1 m)	T-junction boxes (L = 1 m)	Line terminator
Description	10 RJ45 connectors and 1 screw terminal	Equipped with 2 RJ45 connectors	T-junction boxes (with integrated cable)	Adaptation for RJ45 connector
Reference	LU9GC3	VW3A8306R10	VW3A8306TF10	VW3A8306RC

PC software for Altivar 21 drives

Description	It includes various functions such as: Preparing configurations, setup and maintenance. It can operate in the following PC environments and configurations: Microsoft Windows® 98, Microsoft Windows® 2000, Microsoft Windows® XP, Pentium® 233 MHz or more, hard disk with 10 Mb available, 32 Mb RAM, 256 colour 640 x 480 pixels or higher definition monitor.
Reference	VW3A21104

Dimensions (in mm)	width x height x depth
Size 1: 72 x 145 x 120	/ Size 2: 72 x 145 x 130
Size 3: 72 x 145 x 140	/ Size 4: 72 x 145 x 145
Size 5: 105 x 143 x 130	/ Size 6: 105 x 143 x 150
Size 7: 140 x 184 x 150	/ Size 8: 180 x 232 x 170
Size 9: 245 x 330 x 190	



Supply voltage			Single phase 200...240 V		Three phase 200...240 V		380...500 V	
Output frequency			0.5...500 Hz					
Type of control			Sensorless flux vector control					
Speed range			1 to 50					
Degree of protection			IP31 and IP41 on upper part and IP21 on connection terminals					
I/O	Analog inputs		3 configurable analog inputs					
	Logic inputs		6 programmable logic inputs					
	Analog outputs		1 current analog output (assignable as logic output) and 1 voltage analog output					
	Relay outputs		2 relay logic outputs					
Dialogue			Integrated display terminal with or without local controls (1) or PowerSuite software workshop (see page 4/30)					
Communication			Integrated		Modbus and CANopen			
(see page 4/30)			Available as an option		DeviceNet, Ethernet TCP/IP, Fipio, Profibus DP			
EMC	Class A		Integrated class A filter		External filter available as an option		Integrated class A filter	
	Class B		External filter available as an option					
Motor power	kW/HP	0.18/0.25	ATV31H018M2	Size 3	ATV31H018M3X	Size 1	–	
		0.37/0.5	ATV31H037M2	Size 3	ATV31H037M3X	Size 1	ATV31H037N4	Size 5
		0.55/0.75	ATV31H055M2	Size 4	ATV31H055M3X	Size 2	ATV31H055N4	Size 5
		0.75/1	ATV31H075M2	Size 4	ATV31H075M3X	Size 2	ATV31H075N4	Size 6
		1.1/1.5	ATV31HU11M2	Size 6	ATV31HU11M3X	Size 5	ATV31HU11N4	Size 6
		1.5/2	ATV31HU15M2	Size 6	ATV31HU15M3X	Size 5	ATV31HU15N4	Size 6
		2.2/3	ATV31HU22M2	Size 7	ATV31HU22M3X	Size 6	ATV31HU22N4	Size 7
		3/–	–		ATV31HU30M3X	Size 7	ATV31HU30N4	Size 7
		4/5	–		ATV31HU40M3X	Size 7	ATV31HU40N4	Size 7
		5.5/7.5	–		ATV31HU55M3X	Size 8	ATV31HU55N4	Size 8
		7.5/10	–		ATV31HU75M3X	Size 8	ATV31HU75N4	Size 8
		11/15	–		ATV31HD11M3X	Size 9	ATV31HD11N4	Size 9
		15/20	–		ATV31HD15M3X	Size 9	ATV31HD15N4	Size 9

(1) For drive with local controls (Run/Stop keys and potentiometer) add an "A" at the end of the reference.
To order a drive intended for spooling applications, add a «T» at the end of the reference.

Enclosed drives

Dimensions (in mm)	width x height x depth
Size 1: 210 x 240 x 163	/ Size 2: 215 x 297 x 192
Size 3: 230 x 340 x 208	/ Size 4: 320 x 512 x 276
Size 5: 440 x 625 x 276	



Supply voltage			Single phase 200...240 V		Three phase 380...500 V	
Degree of protection			IP55			
Description			Enclosure equipped with an ATV31 drive with external heatsink. Removable covers for adding 1 switch-disconnector or 1 circuit-breaker, 3 buttons and/or LEDs, 1 potentiometer			
Motor power	kW/HP	0.18/0.25	ATV31C018M2	Size 1	–	
		0.37/0.5	ATV31C037M2	Size 1	ATV31C037N4	Size 2
		0.55/0.75	ATV31C055M2	Size 1	ATV31C055N4	Size 2
		0.75/1	ATV31C075M2	Size 1	ATV31C075N4	Size 2
		1.1/1.5	ATV31CU11M2	Size 2	ATV31CU11N4	Size 2
		1.5/2	ATV31CU15M2	Size 2	ATV31CU15N4	Size 2
		2.2/3	ATV31CU22M2	Size 3	ATV31CU22N4	Size 3
		3/–	–	–	ATV31CU30N4	Size 3
		4/5	–	–	ATV31CU40N4	Size 3
		5.5/7.5	–	–	ATV31CU55N4 (2)	Size 4
		7.5/10	–	–	ATV31CU75N4 (2)	Size 4
		11/15	–	–	ATV31CD11N4 (2)	Size 5
		15/20	–	–	ATV31CD15N4 (2)	Size 5

Drive kit (Altivar 31 drive on metal support plate with EMC filter): Please consult your Schneider Electric sales office. (2) Drive in metal enclosure without cover.

Additional EMC input filters



Supply voltage			Single phase 200...240 V		Three phase 200...240 V	380...500 V	
Maximum length of shielded cable (1)		Class A	5 m	50 m	5 m	5 m	50 m
		Class B	–	20 m	–	–	20 m
References	Drive	ATV31	H018M2 to H075M2		H018M3X to H075M3X	H037N4 to HU15N4	
	Filter		Integrated	VW3A31401	VW3A31402	Integrated	VW3A31404
	Drive	ATV31	HU11M2 to HU15M2		HU11M3X to HU22M3X	HU22N4 to HU40N4	
	Filters		Integrated	VW3A31403	VW3A31404	Integrated	VW3A31406
	Drive	ATV31	HU22M2		HU30M3X - HU40M3X	HU55N4 - HU75 N4	
	Filters		Integrated	VW3A31405	VW3A31406	Integrated	VW3A31407
	Drive	ATV31	–		HU55M3X - HU75M3X	HD11N4 - HD15N4	
	Filters		–		VW3A31407	Integrated	VW3A31409
	Drive	ATV31	–		HD11M3X - HD15M3X	–	
	Filters		–		VW3A31408	–	

(1) Maximum lengths for shielded cables connecting motors to drives for a switching frequency of 2 to 16 kHz

4

Line chokes



Supply voltage			Single phase 200...240 V		Three phase 200...240 V	380...500 V	
References	Drive	ATV31	H018M2 to H037M2		H018M3X to H075M3X	H037N4 to HU15N4	
	Choke		VZ1 L004M010		VW3A4551	VW3A4551	
	Drive	ATV31	H055M2 to H075M2		HU11M3X and HU15M3X	HU22N4 to HU40N4	
	Choke		VZ1 L007UM50		VW3A4552	VW3A4552	
	Drive	ATV31	HU11M2 to HU22M2		HU22M3X and HU30M3X	HU55N4 and HU75N4	
	Choke		VZ1 L018UM20		VW3A4553	VW3A4553	
	Drive	ATV31	–		HU40M3X to HU75M3X	HD11N4 and HD15N4	
	Choke		VW3A4554		VW3A4554	–	
	Drive	ATV31	–		HD11M3X and HD15M3X	–	
	Choke		VW3A4555				

Braking resistors... accessories: Please consult your Schneider Electric sales office.

Dimensions (in mm) width x height x depth		
S2 : 130 x 230 x 175	S3 : 155 x 260 x 187	
S4 : 175 x 295 x 187	S5A : 210 x 295 x 213	
S5B : 230 x 400 x 213	S6 : 240 x 420 x 236	
S7A : 240 x 550 x 266	S7B : 320 x 550 x 266	
S8 : 320 x 630 x 290	S9 : 320 x 920 x 377	
S10 : 360 x 1022 x 377	S11 : 340 x 1190 x 377	
S12 : 440 x 1190 x 377	S13 : 595 x 1190 x 377	
S14 : 890 x 1390 x 377	S15 : 1120 x 1390 x 377	



Type of drive			Single phase		Three phase		Three phase	
Supply voltage			200...240 V (3)		200...240 V (3)		380...480 V (3)	
Degree of protection			IP21 for unprotected drives and IP41 on the upper part					
Drive	Output frequency		0.5...1600 Hz up to 37 kW; 0.5...500 Hz from 45 to 630 kW					
	Type of control	Asynchronous motor	kn² quadratic ratio, flux vector control with or without sensor, voltage/frequency ratio (2 or 5 points), energy saving ratio					
		Synchronous motor	Vector control without speed feedback					
	Transient overtorque		110% to 120% of the nominal drive current for 60 seconds					
Speed range			1...100 in open loop mode					
Functions	Number of functions		> 150					
	Number of preset speeds		16					
	Number of I/O		Analog inputs 2...4/Logic inputs 6...20					
			Analog outputs 1...3/Logic outputs 0...8					
			Relay outputs 2...4					
			Safety input 1					
Dialogue			Remote graphic display terminal or PowerSuite software workshop (see pages 4/17 and 4/30)					
Communication (see page 4/30)	Integrated		Modbus and CANopen					
	Available as an option		HVAC protocols: LonWorks, BACnet, METASYS N2, APOGEE FLN Industrial: Ethernet TCP/IP, Modbus/Uni-Telway, Fipio, Modbus Plus, Profibus DP, DeviceNet, INTERBus					
Cards (available as an option)			Multi-pump cards, I/O extension cards, “Controller Inside” programmable card					
Reduction of current harmonics			DC choke integrated or supplied with the product (optional chokes and passive filters, see page 4/18)					
EMC	Class A		Integrated filter					
	Class B		External filter available as an option					
Motor power	kW/HP	0.37/0.5	ATV61H075M3	S2	–		–	
		0.75/1	ATV61HU15M3	S2	ATV61H075M3	S2	ATV61H075N4 (3)	S2
		1.5/2	ATV61HU22M3	S3	ATV61HU15M3	S2	ATV61HU15N4 (3)	S2
		2.2/3	ATV61HU30M3	S3	ATV61HU22M3	S3	ATV61HU22N4 (3)	S2
		3/–	ATV61HU40M3 (1)	S3	ATV61HU30M3	S3	ATV61HU30N4 (3)	S3
		4/5	ATV61HU55M3 (1)	S4	ATV61HU40M3	S3	ATV61HU40N4 (3)	S3
		5.5/7.5	ATV61HU75M3 (1)	S5A	ATV61HU55M3	S4	ATV61HU55N4 (3)	S4
		7.5/10	–	–	ATV61HU75M3	S5A	ATV61HU75N4 (3)	S4
		11/15	–	–	ATV61HD11M3X(2)	S5B	ATV61HD11N4 (3)	S5A
		15/20	–	–	ATV61HD15M3X(2)	S5B	ATV61HD15N4 (3)	S5B
		18.5/25	–	–	ATV61HD18M3X(2)	S6	ATV61HD18N4 (3)	S5B
		22/30	–	–	ATV61HD22M3X(2)	S6	ATV61HD22N4 (3)	S6
		30/40	–	–	ATV61HD30M3X(2)	S7B	ATV61HD30N4 (3)	S7A
		37/50	–	–	ATV61HD37M3X(2)	S7B	ATV61HD37N4 (3)	S7A
		45/60	–	–	ATV61HD45M3X(2)	S7B	ATV61HD45N4 (3)	S8
		55/75	–	–	ATV61HD55M3X(2)	S9	ATV61HD55N4 (3)	S8
		75/100	–	–	ATV61HD75M3X(2)	S9	ATV61HD75N4 (3)	S8
		90/125	–	–	ATV61HD90M3X(2)	S10	ATV61HD90N4 (3)	S9
		110/150	–	–	–	–	ATV61HC11N4	S9
		132/200	–	–	–	–	ATV61HC13N4	S10
		160/250	–	–	–	–	ATV61HC16N4	S11
		200/300	–	–	–	–	ATV61HC22N4	S12
		220/350	–	–	–	–	ATV61HC22N4	S12
		250/400	–	–	–	–	ATV61HC25N4	S13
		280/450	–	–	–	–	ATV61HC31N4	S13
		315/500	–	–	–	–	ATV61HC31N4	S13
		355/–	–	–	–	–	ATV61HC40N4	S14
		400/600	–	–	–	–	ATV61HC40N4	S14
		500/700	–	–	–	–	ATV61HC50N4	S14
		560/800	–	–	–	–	ATV61HC63N4	S15
		630/900	–	–	–	–	ATV61HC63N4	S15

(1) Must be used with a line choke, see page 4/18

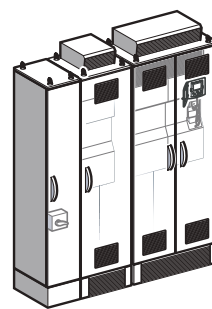
(2) Drive supplied without EMC filter

(3) To order a reinforced version of the drive for specific environmental conditions, conforming to IEC 60721-3-3 class 3c2, add **S337** at the end of the reference.

E.g. ATV61H075N4**S337**

IP54 drives

Dimensions (in mm) width x height x depth	
ATV61W...	ATV61E5C... in enclosure
SA2 : 235 x 490 x 272	A1 : 616 x 2000 x 600
SA3 : 235 x 490 x 286	A2 : 816 x 2000 x 600
SB : 255 x 525 x 286	A3 : 1016 x 2000 x 600
SC : 290 x 560 x 315	A3 : 1220 x 2000 x 600
SD : 310 x 665 x 315	A3 : 2024 x 2000 x 600
SE : 284 x 720 x 315	A4 : 1216 x 2000 x 600
SF : 284 x 880 x 343	A4 : 1820 x 2000 x 600
SG : 362 x 1000 x 364	A4 : 2224 x 2000 x 600



Type of drive			Three phase 380...480 V (3)				Three phase range in ready-assembled enclosure (4) 380...480 V		
Degree of protection			UL Type 12/IP54				IP54 enclosure		
Drive	Output frequency		0.5...1600 Hz up to 37 kW; 0.5...500 Hz from 45 to 630 kW						
	Type of control		Asynchronous motorkn² quadratic ratio, flux vector control with or without sensor, voltage/frequency ratio (2 or 5 points), energy saving ratio						
	Synchronous motor		Vector control without speed feedback						
	Transient overtorque		110% to 120% of the nominal drive current for 60 seconds						
Speed range			1...100 in open loop mode						
Functions	Number of functions		> 150						
	Number of preset speeds		16						
	Number of I/O		Analog inputs 2...4/Logic inputs 6...20						
			Analog outputs 1...3/Logic outputs 0...8						
			Relay outputs 2...4						
			Safety input 1						
Dialogue			Remote graphic display terminal or PowerSuite software workshop (see page 4/30)						
Communication (see page 4/30)	Integrated		Modbus and CANopen						
	Available as an option		HVAC protocols: LonWorks, BACnet, METASYS N2, APOGEE FLN Industrial: Ethernet TCP/IP, Modbus/Uni-Telway, Fipio, Modbus Plus, Profibus DP, DeviceNet, INTERBUS						
Cards (available as an option)			Multi-pump cards, I/O extension cards, "Controller Inside" programmable card						
Reduction of current harmonics			Integrated DC choke (optional chokes and passive filters, see page 4/18)						
EMC	Class A		Integrated filter				Integrated filter		
	Class B						External filter available as an option		
Motor power	kW/HP	0.75/1	ATV61W075N4	SA2	ATV61W075N4C	SA2	–		
		1.5/2	ATV61WU15N4	SA2	ATV61WU15N4C	SA2	–		
		2.2/3	ATV61WU22N4	SA2	ATV61WU22N4C	SA2	–		
		3/–	ATV61WU30N4	SA3	ATV61WU30N4C	SA3	–		
		4/5	ATV61WU40N4	SA3	ATV61WU40N4C	SA3	–		
		5.5/7.5	ATV61WU55N4	SB	ATV61WU55N4C	SB	–		
		7.5/10	ATV61WU75N4	SB	ATV61WU75N4C	SB	–		
		11/15	ATV61WD11N4	SC	ATV61WD11N4C	SC	–		
		15/20	ATV61WD15N4	SD	ATV61WD15N4C	SD	–		
		18.5/25	ATV61WD18N4	SD	ATV61WD18N4C	SD	–		
		22/30	ATV61WD22N4	SE	ATV61WD22N4C	SE	–		
		30/40	ATV61WD30N4	SF	ATV61WD30N4C	SF	–		
		37/50	ATV61WD37N4	SF	ATV61WD37N4C	SF	–		
		45/60	ATV61WD45N4	SG	ATV61WD45N4C	SG	–		
		55/75	ATV61WD55N4	SG	ATV61WD55N4C	SG	–		
		75/100	ATV61WD75N4	SG	ATV61WD75N4C	SG	–		
		90/125	ATV61WD90N4	SG	ATV61WD90N4C	SG	–		
Ready-assembled enclosure with braking transistor integrated in the drive	110/150	–	–			ATV61HC11N4	ATV61E5C11N4	A1	
	132/200	–	–			ATV61HC13N4	ATV61E5C13N4	A1	
	160/250	–	–			ATV61HC16N4	ATV61E5C16N4	A1	
	220/350	–	–			ATV61HC22N4	ATV61E5C22N4	A1	
Ready-assembled enclosure with braking unit in the enclosure	250/400	–	–			ATV61HC25N4	ATV61E5C25N4F	A2	
	315/500	–	–			ATV61HC31N4	ATV61E5C31N4F	A2	
Ready-assembled enclosure without braking unit	250/400	–	–			ATV61HC25N4	ATV61E5C25N4	A2	
	315/500	–	–			ATV61HC31N4	ATV61E5C31N4	A2	
	400/600	–	–			ATV61HC40N4	ATV61E5C40N4	A3	
	500/700	–	–			ATV61HC50N4	ATV61E5C50N4	A3	
	630/900	–	–			ATV61HC63N4	ATV61E5C63N4	A4	

(4) The Altivar 61 range in ready-assembled enclosure consists of:

- An ATV61H... drive
- A switch and fast-acting fuses
- An IP65 remote mounting kit for graphic display terminal



Type of card	I/O extension Logic	Extended
Description	1 relay logic output ("C/O" contact) 4 x 24 VDC positive or negative logic inputs 2 x 24 VDC open collector positive or negative logic outputs 1 input for PTC probes	1 x 0...20 mA differential current analog input 1 software-configurable voltage (0...10 VDC) or current (0...20 mA) analog input 2 software-configurable voltage ($\pm 10V$, 0...10 VDC) or current (0...20 mA) analog outputs 1 relay logic output ("C/O" contact) 4 x 24 VDC positive or negative logic inputs 2 x 24 VDC open collector positive or negative logic outputs 1 input for PTC probes 1 frequency control input
Reference	VW3A3201	VW3A3202

"Controller Inside" programmable card



Type of card	Programmable "Controller Inside"
Description	10 logic inputs, 2 of which can be used for 2 counters or 4 of which can be used for 2 incremental encoders 2 analog inputs, 6 logic outputs, 2 analog outputs, a master port for the CANopen bus, a PC port for programming with the PS 1131 software workshop.
Reference	VW3A3501

Multi-pump cards



Type of card	Multi-pump
Description	Ensures compatibility with an ATV61 of applications developed for an ATV 38. The card's 9 operating modes are: ■ OFF: no function is activated. This mode is used in particular during maintenance of the installation. ■ Single variable. ■ Multiple variable. ■ Single variable with changeover of auxiliary pumps. ■ Multiple variable with changeover of auxiliary pumps. ■ Single variable with limited operating time. ■ Multiple variable with limited operating time. ■ Single variable with changeover of auxiliary pumps and limited operating time. ■ Multiple variable with changeover of auxiliary pumps and limited operating time.
Reference	VW3A3502
Description	Can be used to support all multi-pump applications In addition to the existing operating modes, it is possible to develop new applications: booster station, irrigation, etc.
Reference	VW3A3503

Dialogue accessories



Accessory	Remote graphic display terminal	Remote mounting kit (1)
Description	This display terminal is attached to the front of the drive. It includes the integrated 7-segment display terminal for drives supplied without a graphic display terminal.	A remote mounting kit for mounting on an enclosure door with IP54 degree of protection. It includes: ■ All the mechanical fittings ■ Fixing accessories
References	VW3A1101	VW3A1102

(1) Use a VW3A1104R remote-mounting connection cable, to be ordered separately (please consult the "Soft starters and variable speed drives" catalogue)

Additional EMC input filters

The additional EMC input filters can be used to meet the requirements of the EMC "products" standard IEC/EN 61800-3, edition 2, category C2 or C3 in environment 1 or 2.

Type of drive	Three phase 200...240 V 50/60 Hz			380...480 V 50/60 Hz		
		Class A	Class B		Class A	Class B
Maximum length of shielded cable						
ATV61H075M3, HU15M3	VW3A4401	100 m	50 m	—		
ATV61HU22M3...HU40M3	VW3A4402	100 m	50 m	—		
ATV61HU55M3	VW3A4403	100 m	50 m	—		
ATV61HU75M3	VW3A4404	100 m	50 m	—		
ATV61HD11M3X, HD15M3X	VW3A4405	200 m	50 m	—		
ATV61HD18M3X, HD22M3X	VW3A4406	200 m	50 m	—		
ATV61HD30M3X...HD45M3X	VW3A4408	200 m	50 m	—		
ATV61HD55M3X, HD75M3X	VW3A4410	100 m	50 m	—		
ATV61HD90M3X	VW3A4411	100 m	50 m	—		
ATV61●075N4(C)...●U22N4(C)	—			VW3A4401	100 m	50 m
ATV61●U30N4(C), ●U40N4(C)	—			VW3A4402	100 m	50 m
ATV61●U55N4(C), ●U75N4(C)	—			VW3A4403	100 m	50 m
ATV61●D11N4(C)	—			VW3A4404	100 m	50 m
ATV61●D15N4(C), ●D18N4(C)	—			VW3A4405	300 m	100 m
ATV61●D22N4(C)	—			VW3A4406	300 m	100 m
ATV61●D30N4(C), ●D37N4(C)	—			VW3A4407	300 m	100 m
ATV61●D45N4(C)...●D75N4(C)	—			VW3A4408	300 m	100 m
ATV61●D90N4(C)...HC16N4, ATV61E5C11N4...E5C16N4	—			VW3A4410	300 m	50 m
ATV61HC22N4...HC31N4, ATV61E5C22N4...E5C31N4	—			VW3A4411	300 m	50 m
ATV61HC40N4, HC50N4, ATV61E5C40N4, E5C50N4	—			VW3A4412	300 m	50 m
ATV61HC63N4, ATV61E5C63N4	—			VW3A4413	300 m	50 m

● Applies to the following drives: ATV61H...N4, ATV61H...N4C, ATV61W...N4, ATV61W...N4C



A line choke can be used to provide improved protection against overvoltages on the line supply and to reduce harmonic distortion of the current produced by the drive.

Type of drive	Single phase	Three phase	
Supply voltage	200...240 V 50/60 Hz	200...240 V 50/60 Hz	380...480 V 50/60 Hz
ATV61HU40M3	VW3A58501	–	–
ATV61HU55M3, HU75M3	VW3A58502	–	–
ATV61H075M3	–	VW3A4551	–
ATV61HU15M3, HU22M3	–	VW3A4552	–
ATV61HU30M3	–	VW3A4553	–
ATV61HU40M3, HU55M3	–	VW3A4554	–
ATV61HU75M3, HD11M3X	–	VW3A4555	–
ATV61HD15M3X	–	VW3A4556	–
ATV61HD18M3X...HD45M3X	–	VW3A4557	–
ATV61HD55M3XD, ATV61HD75M3XD	–	VW3A4561	–
ATV61HD90M3XD	–	VW3A4564	–
ATV61●075N4(C), ●U15N4(C)	–	–	VW3A4551
ATV61●U22N4(C)...●U40N4(C)	–	–	VW3A4552
ATV61●U55N4(C), ●U75N4(C)	–	–	VW3A4553
ATV61●D11N4(C), ●D15N4(C)	–	–	VW3A4554
ATV61●D18N4(C), ●D22N4(C)	–	–	VW3A4555
ATV61●D30N4(C)...●D55N4(C)	–	–	VW3A4556
ATV61●D75N4(C)	–	–	VW3A4557
ATV61HD90N4D	–	–	VW3A4558
ATV61HC11N4D, ATV61E5C11N4	–	–	VW3A4559
ATV61HC13N4D, ATV61E5C13N4	–	–	VW3A4560
ATV61HC16N4D, ATV61E5C16N4	–	–	VW3A4568
ATV61HC22N4D, ATV61E5C22N4	Motor P 200 kW	–	VW3A4561
	Motor P 220 kW	–	VW3A4569
ATV61HC25N4D, HC50N4D, ATV61E5C25N4, E5C50N4	–	–	VW3A4569
ATV61HC31N4D, HC63N4D, ATV61E5C31N4, E5C63N4	–	–	VW3A4564
ATV61HC40N4D, ATV61E5C40N4	–	–	VW3A4565

DC chokes are used to reduce current harmonics in order to comply with standard 61000-3-2 for drives in which the line current is more than 16 A and less than 75 A.

Reduction of current harmonics

Optional DC chokes ⁽¹⁾

Type of drive	Three phase	
Supply voltage	200...240 V 50/60 Hz	380...480 V 50/60 Hz
ATV61H075M3	VW3A4503	–
ATV61HU15M3	VW3A4505	–
ATV61HU22M3	VW3A4506	–
ATV61HU30M3	VW3A4507	–
ATV61HU40M3, HU55M3	VW3A4508	–
ATV61HU75M3	VW3A4509	–
ATV61HD11M3X, HD15M3X	VW3A4510	–
ATV61HD18M3X, HD22M3X	VW3A4511	–
ATV61HD30M3X...HD45M3X	VW3A4512	–
ATV61●075N4(C)	–	VW3A4501
ATV61●U15N4(C)	–	VW3A4502
ATV61●U22N4(C), ●U30N4(C)	–	VW3A4503
ATV61●U40N4(C)	–	VW3A4504
ATV61●U55N4(C)	–	VW3A4505
ATV61●U75N4(C)	–	VW3A4506
ATV61●D11N4(C)	–	VW3A4507
ATV61●D15N4(C), ●D18N4(C)	–	VW3A4508
ATV61●D22N4(C)...●D37N4(C)	–	VW3A4510
ATV61●D45N4(C)...●D75N4(C)	–	VW3A4 511

● Applies to the following drives: ATV61H...N4, ATV61H...N4C, ATV61W...N4, ATV61W...N4C

(1) For ATV61HD55M3X, HD75M3X and ATV61HD90N4... HC50N4 drives, the choke is supplied as standard with the drive.

Passive filters

A passive filter is used to reduce current harmonics with total harmonic distortion factors of less than 16% or 10%. These factors may be less than 10%, or 5% if used with a DC choke.

Type of drive	Three phase 400 V 50/60 Hz		Three phase 460 V 50/60 Hz	
	THDI 16% (1)	THDI 10% (2)	THDI 16% (1)	THDI 10% (2)
ATV61●075N4(C), ●U15N4(C), ●U22N4(C), ●U30N4(C)	VW3A4601	VW3A4621	VW3A4641	VW3A4661
ATV61●U40N4(C), ●U55N4(C)	VW3A4602	VW3A4622	VW3A4642	VW3A4662
ATV61●U75N4(C), ●D11N4(C)	VW3A4603	VW3A4623	VW3A4643	VW3A4663
ATV61●D15N4(C)	VW3A4604	VW3A4624	VW3A4644	VW3A4664
ATV61●D18N4(C)	VW3A4605	VW3A4625	VW3A4645	VW3A4665
ATV61●D22N4(C)	VW3A4606	VW3A4626	VW3A4645	VW3A4665
ATV61●D30N4(C)	VW3A4607	VW3A4627	VW3A4646	VW3A4666
ATV61●D37N4(C)	VW3A4607	VW3A4627	VW3A4647	VW3A4667
ATV61●D45N4(C)	VW3A4608	VW3A4628	VW3A4647	VW3A4667
ATV61●D55N4(C)	VW3A4608	VW3A4628	VW3A4648	VW3A4668
ATV61●D75N4(C)	VW3A4609	VW3A4629	VW3A4648	VW3A4668
ATV61●D90N4(C)	VW3A4609	VW3A4629	VW3A4649	VW3A4669
ATV61HC11N4, ATV61E5C11N4	VW3A4610	VW3A4630	VW3A4649	VW3A4669
ATV61HC13N4, ATV61E5C13N4	VW3A4611	VW3A4631	VW3A4656	VW3A4676
ATV61HC16N4, ATV61E5C16N4	VW3A4612	VW3A4632	VW3A4650	VW3A4670
ATV61HC22N4, ATV61E5C22N4	VW3A4613	VW3A4633	VW3A4651	VW3A4671
ATV61HC25N4, ATV61E5C25N4	VW3A4611	VW3A4631	VW3A4656	VW3A4676
ATV61HC31N4, HC40N4, ATV61E5C31N4, E5C63N4	VW3A4612	VW3A4632	VW3A4650	VW3A4670
ATV61HC40N4, ATV61E5C40N4	VW3A4619	VW3A4639	VW3A4657	VW3A4677
ATV61HC50N4, ATV61E5C50N4	VW3A4612	VW3A4632	VW3A4651	VW3A4671
ATV61HC63N4, ATV61E5C63N4	VW3A4613	VW3A4633	VW3A4657	VW3A4677

● Applies to the following drives: ATV61H...N4, ATV61H...N4C, ATV61W...N4, ATV61W...N4C

(1) By adding a DC choke, we get: THD ≤ 10%

(2) By adding a DC choke, we get: THD ≤ 15%

These reduced current harmonics are obtained on condition that the THDu is < 20% and the RSCE > 66%.

Sinusoidal filters

Sinusoidal filters allow Altivar 61 drives to operate with longer motor cables (up to 1000 m).

Type of drive	Three phase	
Supply voltage	200...240 V 50/60 Hz	380...480 V 50/60 Hz
ATV61H075M3, HU15M3 (2)	VW3A5201	—
ATV61HU22M3, HU30M3	VW3A5202	—
ATV61HU40M3...HU75M3	VW3A5203	—
ATV61HD11M3X, HD15M3X	VW3A5204	—
ATV61HD18M3X, HD22M3X	VW3A5205	—
ATV61HD30M3X...HD45M3X	VW3A5206	—
ATV61HD55M3X, HD75M3X	VW3A5208	—
ATV61HD90M3X	VW3A5209	—
ATV61●U15N4(C)...HU40N4(C) (2)	—	VW3A5201
ATV61●U55N4(C)	—	VW3A5202
ATV61●U75N4(C)...●D15N4(C)	—	VW3A5203
ATV61●D18N4(C)...●D30N4(C)	—	VW3A5204
ATV61●D37N4(C), ●D45N4(C)	—	VW3A5205
ATV61●D55N4(C), ●D75N4(C)	—	VW3A5206
ATV61●D90N4(C), HC11N4, ATV61E5C11N4	—	VW3A5207
ATV61HC13N4, HC16N4, ATV61E5C13N4, E5C16N4	—	VW3A5208
ATV61HC22N4, ATV61E5C22N4	—	VW3A5209
ATV61HC25N4, HC31N4, ATV61E5C25N4, E5C31N4	—	VW3A5210
ATV61HC40N4, ATV61E5C40N4	Motor P 355 kW	VW3A5210
	Motor P 400 kW	VW3A5211
ATV61HC50N4, HC63N4, ATV61E5C50N4, E5C63N4	—	VW3A5211

● Applies to the following drives: ATV61H...N4, ATV61H...N4C, ATV61W...N4, ATV61W...N4C

(2) For ATV61H075M3, HU15M3 and ATV61HU15N4 drives, it is advisable to use a lower power motor with a sinusoidal filter

Above a certain motor cable length, it is advisable to insert a motor choke between the drive and the motor. This maximum length depends on the drive rating and the type of motor cable.

Type of drive	Max. motor cable length		Three phase	
	Shielded	Unshielded	200...240 V 50/60Hz	380...480 V 50/60 Hz
ATV61H075M3...HU22M3	150 m	300 m	VW3A5101	–
ATV61HU30M3...HU75M3	200 m	260 m	VW3A5102	–
	300 m	300 m	VW3A5103	–
ATV61HD11M3X...HD22M3X	150 m	300 m	VW3A5103	–
ATV61HD30M3X...HD45M3X	150 m	300 m	VW3A5104	–
ATV61HD55M3X, HD75M3X	150 m	300 m	VW3A5105	–
ATV61HD90M3X	250 m	300 m	VW3A5106	–
ATV61●075N4(C)...●U40N4(C)	75 m	90 m	–	VW3A5101
	85 m	95 m	–	VW3A5102
	160 m	200 m	–	VW3A5103
ATV61●U55N4(C)...●D18N4(C)	85 m	95 m	–	VW3A5102
	160 m	200 m	–	VW3A5103
	200 m	300 m	–	VW3A5104 (1)
ATV61●D22N4(C)...●D30N4(C)	140 m	170 m	–	VW3A5103
	150 m	300 m	–	VW3A5104 (1)
ATV61●D37N4(C)	97 m	166 m	–	VW3A5103
	200 m	300 m	–	VW3A5104 (1)
ATV61●D45N4(C)...●D75N4(C)	150 m	300 m	–	VW3A5104 (1)
ATV61●D90N4(C)	200 m	300 m	–	VW3A5104 (1)
ATV61HC11N4, HC13N4, ATV61E5C11N4,E5C13N4	150 m	250 m	–	VW3A5105 (1)
ATV61HC16N4, ATV61E5C16N4	250 m	300 m	–	VW3A5106 (1)
ATV61HC22N4, ATV61E5C22N4	250 m	300 m	–	VW3A5106 (1)
ATV61HC25N4, ATV61E5C25N4	200 m	250 m	–	VW3A5107 (1)
ATV61HC31N4, ATV61E5C31N4	200 m	250 m	–	VW3A5107 (1)
ATV61HC40N4, ATV61E5C40N4	Motor P 355 kW	200 m	–	VW3A5107 (1)
	Motor P 400 kW	250 m	–	VW3A5108 (1)
ATV61HC50N4, ATV61E5C50N4	250 m	300 m	–	VW3A5108 (1)
ATV61HC63N4, ATV61E5C63N4	250 m	300 m	–	VW3A5108 (1)

● Applies to the following drives: ATV61H...N4, ATV61H...N4C, ATV61W...N4, ATV61W...N4C

(1) 3 single phase chokes are included with the drive.

Resistance braking units (integrated in ATV61 drives up to 220 kW)

ATV61H●●●M3, ATV61H●●●M3X and ATV61H075N4...HC22N4, ATV61W●●●N4 and ATV61W●●●N4C drives have a built-in braking transistor.

The braking resistor enables the Altivar 61 drive to operate while braking to a standstill or during slowdown braking, by dissipating the braking energy.

Supply voltage	Three phase 380...480 V 50/60 Hz	
Type of drive	ATV61HC25N4, HC31N4	ATV61HC40N4, HC50N4, HC63N4
Continuous power/Max (kW)	200/420	400/750
Reference	VW3A7101	VW3A7102

Braking resistors



The network braking unit can be used to restore the following to the line supply:

- The energy from the motor
- The energy from the motors controlled by several drives connected on the same DC bus

Type of drive	Three phase	
Supply voltage	200...240 V 50/60 Hz	380...480 V 50/60 Hz
ATV61H075M3	VW3A7701	—
ATV61HU15M3, HU22M3	VW3A7702	—
ATV61HU30M3, HU40M3	VW3A7703	—
ATV61HU55M3, HU75M3	VW3A7704	—
ATV61HD11M3X	VW3A7705	—
ATV61HD15M3X	VW3A7706	—
ATV61HD18M3X, HD22M3X	VW3A7707	—
ATV61HD30M3X	VW3A7708	—
ATV61HD37M3X, HD45M3X	VW3A7709	—
ATV61HD55M3X, HD75M3X	VW3A7713	—
ATV61HD90M3X	VW3A7714	—
ATV61H075N4...HU40N4, ATV61W075N4...WU55N4, ATV61W075N4C...WU55N4C	—	VW3A7701
ATV61HU55N4, HU75N4, ATV61WU75N4, WD11N4, ATV61WU75N4C, WD11N4C	—	VW3A7702
ATV61HD11N4, HD15N4, ATV61WD15N4, WD18N4, ATV61WD15N4C, WD18N4C	—	VW3A7703
ATV61HD18N4...HD30N4, ATV61WD22N4...WD37N4, ATV61WD22N4C...WD37N4C	—	VW3A7704
ATV61HD37N4, ATV61WD45N4, WD45N4C	—	VW3A7705
ATV61WD55N4...WD90N4, ATV61WD55N4C...WD90N4C	—	VW3A7706
ATV61HD45N4...HD75N4	—	VW3A7707
ATV61HD90N4, HC11N4, ATV61E5C11N4	—	VW3A7710
ATV61HC13N4, HC16N4, ATV61E5C13N4, E5C16N4	—	VW3A7711
ATV61HC22N4, ATV61E5C22N4	—	VW3A7712
ATV61HC25N4, ATV61E5C25N4	—	VW3A7715
ATV61HC31N4, ATV61E5C31N4	—	VW3A7716
ATV61HC40N4, HC50N4, ATV61E5C40N4, E5C50N4	—	VW3A7717
ATV61HC63N4, ATV61E5C63N4	—	VW3A7718

Dimensions (in mm) width x height x depth	
S2 : 130 x 230 x 175	S3 : 155 x 260 x 187
S4 : 175 x 295 x 187	S5A : 210 x 295 x 213
S5B : 230 x 400 x 213	S6 : 240 x 420 x 236
S7A : 240 x 550 x 266	S7B : 320 x 550 x 266
S8 : 320 x 630 x 290	S9 : 320 x 920 x 377
S10 : 360 x 1022 x 377	S11 : 340 x 1190 x 377
S12 : 440 x 1190 x 377	S13 : 595 x 1190 x 377
S14 : 890 x 1390 x 377	S15 : 1120 x 1390 x 377



Type of drive			Single phase		Three phase		Three phase		Three phase on base plate		
Supply voltage			200...240 V (3)		200...240 V (3)		380...480 V (3)		380...480 V (3)		
Degree of protection			IP21 for unprotected drives and IP41 on the upper part								
Drive	Output frequency		0.1...1600 Hz up to 37 kW, 0.1...500 Hz from 45 to 500 kW								
	Type of control	Asynchronous motor	Flux vector control with or without sensor, voltage/frequency ratio (2 or 5 points), ENA System								
		Synchronous motor	Vector control without speed feedback								
	Transient overtorque			220% of nominal motor torque for 2 seconds, and 170% for 60 seconds							
Speed range			1...1000 in closed loop mode with encoder feedback, 1...100 in open loop mode								
Functions	Number of functions		> 150								
	Number of preset speeds		16								
	Number of I/O	Analog inputs	2...4								
		Logic inputs	6...20								
		Analog outputs	1...3								
		Logic outputs	0...8								
		Relay outputs	2...4								
		Safety input	1								
Dialogue			Remote graphic display terminal or PowerSuite software workshop (see pages 4/25 and 4/30)								
Communication (see page 4/30)	Integrated		Modbus and CANopen								
	Available as an option		Ethernet TCP/IP, Modbus/Uni-Telway, Fipio, Modbus Plus, Profibus DP, DeviceNet, INTERBUS								
Cards (available as an option)			Encoder interface cards, I/O extension cards, "Controller Inside" programmable card								
Reduction of current harmonics			DC choke integrated or supplied with the product, (optional chokes and passive filters, see page 4/26)								
EMC	Class A		Integrated filter								
	Class B		External filter available as an option								
Motor power	kW/HP	0.37/0.5	ATV71H075M3	S2	ATV71H037M3	S2	–	–			
		0.75/1	ATV71HU15M3	S2	ATV71H075M3	S2	ATV71H075N4 (3)	S2	ATV71P075N4Z	S2	
		1.5/2	ATV71HU22M3	S3	ATV71HU15M3	S2	ATV71HU15N4 (3)	S2	ATV71PU15N4Z	S2	
		2.2/3	ATV71HU30M3	S3	ATV71HU22M3	S3	ATV71HU22N4 (3)	S2	ATV71PU22N4Z	S2	
		3/–	ATV71HU40M3 (1)	S3	ATV71HU30M3	S3	ATV71HU30N4 (3)	S3	ATV71PU30N4Z	S3	
		4/5	ATV71HU55M3 (1)	S4	ATV71HU40M3	S3	ATV71HU40N4 (3)	S3	ATV71PU40N4Z	S3	
		5.5/7.5	ATV71HU75M3 (1)	S5A	ATV71HU55M3	S4	ATV71HU55N4 (3)	S4	ATV71PU55N4Z	S4	
		7.5/10	–		ATV71HU75M3	S5A	ATV71HU75N4 (3)	S4	ATV71PU75N4Z	S4	
		11/15	–		ATV71HD11M3X (2)	S5B	ATV71HD11N4 (3)	S5A	–		
		15/20	–		ATV71HD15M3X (2)	S5B	ATV71HD15N4 (3)	S5B	–		
		18.5/25	–		ATV71HD18M3X (2)	S6	ATV71HD18N4 (3)	S5B	–		
		22/30	–		ATV71HD22M3X (2)	S6	ATV71HD22N4 (3)	S6	–		
		30/40	–		ATV71HD30M3X (2)	S7B	ATV71HD30N4 (3)	S7A	–		
		37/50	–		ATV71HD37M3X (2)	S7B	ATV71HD37N4 (3)	S7A	–		
		45/60	–		ATV71HD45M3X (2)	S7B	ATV71HD45N4 (3)	S8	–		
		55/75	–		ATV71HD55M3X (2)	S9	ATV71HD55N4 (3)	S8	–		
		75/100	–		ATV71HD75M3X (2)	S10	ATV71HD75N4 (3)	S8	–		
		90/125	–		–		ATV71HD90N4	S9	–		
		110/150	–		–		ATV71HC11N4	S10	–		
		132/200	–		–		ATV71HC13N4	S11	–		
		160/250	–		–		ATV71HC16N4	S12	–		
		200/300	–		–		ATV71HC20N4	S13	–		
		220/350	–		–		ATV71HC25N4	S13	–		
		280/450	–		–		ATV71HC28N4	S13	–		
		315/500	–		–		ATV71HC31N4	S14	–		
		355/–	–		–		ATV71HC40N4	S14	–		
		500/700	–		–		ATV71HC50N4	S15	–		

(1) Must be used with a line choke, see page 4/26

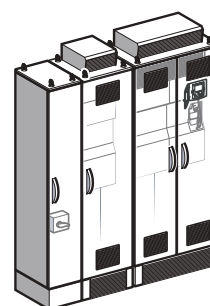
(2) Drive supplied without EMC filter

(3) To order a reinforced version of the drive for specific environmental conditions, conforming to IEC 60721-3-3 class 3c2, add **S337** at the end of the reference.

E.g. ATV71H075N4**S337**

IP54 drives

Dimensions (in mm) width x height x depth	
ATV61W...	ATV61E5C... in enclosure
SA2 : 235 x 490 x 272	A1 : 616 x 2000 x 600
SA3 : 235 x 490 x 286	A2 : 816 x 2000 x 600
SB : 255 x 525 x 286	A3 : 1016 x 2000 x 600
SC : 290 x 560 x 315	A3 : 1220 x 2000 x 600
SD : 310 x 665 x 315	A3 : 2024 x 2000 x 600
SE : 284 x 720 x 315	A4 : 1216 x 2000 x 600
SF : 284 x 880 x 343	A4 : 1820 x 2000 x 600
SG : 362 x 1000 x 364	A4 : 2224 x 2000 x 600



Type of drive			Three phase 380...480 V (3)		Three phase range in ready-assembled enclosure (4) 380...480 V		
Degree of protection			UL Type 12/IP54		IP54 enclosure		
Drive	Output frequency		0.1...1600 Hz up to 37 kW, 0.1...500 Hz from 45 to 500 kW				
	Type of control	Asynchronous motor	Flux vector control with or without sensor, voltage/frequency ratio (2 or 5 points), ENA System				
		Synchronous motor	Vector control without speed feedback				
	Transient overtorque			220% of nominal motor torque for 2 seconds, and 170% for 60 seconds			
Speed range			1...1000 in closed loop mode with encoder feedback, 1...100 in open loop mode				
Functions	Number of functions		> 150				
	Number of preset speeds		16				
	Number of I/O	Analog inputs	2...4				
		Logic inputs	6...20				
		Analog outputs	1...3				
		Logic outputs	0...8				
		Relay outputs	2...4				
		Safety input	1				
Dialogue			Remote graphic display terminal or PowerSuite software workshop (see page 4/30)				
Communication (see page 4/30)	Integrated		Modbus and CANopen				
	Available as an option		Ethernet TCP/IP, Modbus/Uni-Telway, Fipio, Modbus Plus, Profibus DP, DeviceNet, InterBus				
Cards (available as an option)			Encoder interface cards, I/O extension cards, “Controller Inside” programmable card				
Reduction of current harmonics			Optional chokes and passive filters (see page 4/26)				
EMC	Class A		Integrated filter				
	Class B		External filter available as an option				
Motor power	kW/HP	0.75/1	ATV71W075N4	S2	–		
		1.5/2	ATV71WU15N4	S2	–		
		2.2/3	ATV71WU22N4	S2	–		
		3/–	ATV71WU30N4	S3	–		
		4/5	ATV71WU40N4	S3	–		
		5.5/7.5	ATV71WU55N4	S4	–		
		7.5/10	ATV71WU75N4	S4	–		
		11/15	ATV71WD11N4	S5A	–		
		15/20	ATV71WD15N4	S5B	–		
		18.5/25	ATV71WD18N4	S5B	–		
		22/30	ATV71WD22N4	S6	–		
		30/40	ATV71WD30N4	S7A	–		
		37/50	ATV71WD37N4	S7A	–		
		45/60	ATV71WD45N4	S8	–		
		55/75	ATV71WD55N4	S8	–		
		75/100	ATV71WD75N4	S8	–		
Ready-assembled enclosure with braking transistor integrated in the drive	90/125	–	ATV71HD90N4		ATV71E5D90N4	A1	
	110/150	–	ATV71HC11N4		ATV71E5C11N4	A1	
	132/200	–	ATV71HC13N4		ATV71E5C13N4	A1	
	160/250	–	ATV71HC16N4		ATV71E5C16N4	A1	
	200/300	–	ATV71HC20N4		ATV71E5C20N4	A2	
	220/350	–	ATV71HC25N4		ATV71E5C25N4	A2	
	280/450	–	ATV71HC28N4		ATV71E5C28N4	A2	
Ready-assembled enclosure with braking unit in the enclosure	200/300	–	ATV71HC20N4		ATV71E5C20N4F	A2	
	220/350	–	ATV71HC25N4		ATV71E5C25N4F	A2	
	280/450	–	ATV71HC28N4		ATV71E5C28N4F	A2	
Ready-assembled enclosure without braking unit	315/500	–	ATV71HC31N4		ATV71E5C31N4	A3	
	400/600	–	ATV71HC40N4		ATV71E5C40N4	A3	
	500/700	–	ATV71HC50N4		ATV71E5C50N4	A4	

(4) The Altivar 71 range in ready-assembled enclosure consists of:

- An ATV71H... drive
- A switch and fast-acting fuses
- An IP65 remote mounting kit for graphic display terminal



Type of card		I/O extension Logic	Extended
Description		1 relay logic output ("C/O" contact) 4 x 24 VDC positive or negative logic inputs 2 x 24 VDC open collector positive or negative logic outputs 1 input for PTC probes	1 0...20 mA differential current analog input 1 software-configurable voltage (0...10 VDC) or current (0...20 mA) analog input 2 software-configurable voltage (±10V, 0...10 VDC) or current (0...20 mA) analog outputs 1 relay logic output ("C/O" contact) 4 x 24 VDC positive or negative logic inputs 2 x 24 VDC open collector positive or negative logic outputs 1 input for PTC probes 1 frequency control input
Reference		VW3A3201	VW3A3202

4

“Controller Inside” programmable card



Type of card		Programmable “Controller Inside”
Description		10 logic inputs, 2 of which can be used for 2 counters or 4 of which can be used for 2 incremental encoders 2 analog inputs 6 logic outputs 2 analog outputs A master port for the CANopen bus A PC port for programming with the PS 1131 software workshop
Reference		VW3A3501

Encoder interface cards



Type of card		Encoder interface with		
		Differential outputs (RS422)	Open collector outputs (NPN)	Push-pull outputs
Operating frequency		300 kHz		
References	5 V	VW3A3401	–	–
	12 V	–	VW3A3403	VW3A3405
	15 V	VW3A3402	VW3A3404	VW3A3406
	24 V	–	–	VW3A3407



Dialogue accessories



Accessory	Remote graphic display terminal	Remote mounting kit (1)
Description	This display terminal is attached to the front of the drive. It includes the integrated 7-segment display terminal for drives supplied without a graphic display terminal.	A remote mounting kit for mounting on an enclosure door with IP54 degree of protection. It includes: ■ All the mechanical fittings ■ Fixing accessories
References	VW3A1101	VW3A1102

(1) Use a VW3A1104R●● remote-mounting connection cable, to be ordered separately (please consult the "Soft starters and variable speed drives" catalogue)

4

Additional EMC input filters

The additional EMC input filters can be used to meet the requirements of the EMC "products" standard IEC/EN 61800-3, edition 2, category C2 or C3 in environment 1 or 2.

Type of drive	Three phase 200...240 V 50/60 Hz			380...480 V 50/60 Hz		
		Class A	Class B		Class A	Class B
Maximum length of shielded cable						
ATV71H037M3...HU15M3	VW3A4401	100 m	50 m	—		
ATV71HU22M3...HU40M3	VW3A4402	100 m	50 m	—		
ATV71HU55M3	VW3A4403	100 m	50 m	—		
ATV71HU75M3	VW3A4404	100 m	50 m	—		
ATV71HD11M3X, HD15M3X	VW3A4405	100 m	50 m	—		
ATV71HD18M3X, HD22M3X	VW3A4406	100 m	50 m	—		
ATV71HD30M3X...HD45M3X	VW3A4408	100 m	50 m	—		
ATV71HD55M3X, HD75M3X	VW3A4410	100 m	50 m	—		
ATV71●075N4...●U22N4, ATV71P075N4Z...PU22N4Z	—			VW3A4401	100 m	50 m
ATV71●U30N4, ●U40N4, ATV71PU30N4Z, PU40N4Z	—			VW3A4402	100 m	50 m
ATV71●U55N4, ●U75N4, ATV71PU55N4Z, PU75N4Z	—			VW3A4403	100 m	50 m
ATV71●D11N4	—			VW3A4404	100 m	50 m
ATV71●D15N4, ●D18N4	—			VW3A4405	300 m	100 m
ATV71●D22N4	—			VW3A4406	300 m	100 m
ATV71●D30N4, ●D37N4	—			VW3A4407	300 m	100 m
ATV71●D45N4...●D75N4	—			VW3A4408	300 m	100 m
ATV71HD90N4...HC13N4, ATV71E5D90N4...E5C13N4	—			VW3A4410	300 m	50 m
ATV71HC16N4...HC28N4, ATV71E5C16N4...E5C28N4	—			VW3A4411	300 m	50 m
ATV71HC31N4, HC40N4, ATV71E5C31N4, E5C40N4	—			VW3A4412	300 m	50 m
ATV71HC50N4, ATV71E5C50N4	—			VW3A4413	300 m	50 m

● Applies to the following drives: ATV71H...N4, ATV71W...N4



A line choke can be used to provide improved protection against overvoltages on the line supply and to reduce harmonic distortion of the current produced by the drive.

Type of drive Supply voltage	Three phase	
	200...240 V 50/60 Hz	380...480 V 50/60 Hz
ATV71H037M3...H075M3	VW3A4551	—
ATV71HU15M3...HU22M3	VW3A4552	—
ATV71HU30M3	VW3A4553	—
ATV71HU40M3	VW3A4554	—
ATV71HU75M3, HD11M3X	VW3A4555	—
ATV71HD15M3X	VW3A4556	—
ATV71HD18M3X...HD45M3X	VW3A4557	—
ATV71HD55M3X	VW3A4562	—
ATV71HD75M3X	VW3A4563	—
ATV71●075N4, ●U15N4, ATV71P075N4Z, PU15N4Z	—	VW3A4551
ATV71●U22N4...●U40N4, ATV71PU22N4Z...PU40N4Z	—	VW3A4552
ATV71●U55N4, ●U75N4, ATV71PU55N4Z, PU75N4Z	—	VW3A4553
ATV71●D11N4, ●D15N4	—	VW3A4554
ATV71●D18N4, ●D22N4	—	VW3A4555
ATV71●D30N4...●D55N4	—	VW3A4556
ATV71●D75N4	—	VW3A4557
ATV71HD90N4, ATV71E5D90N4	—	VW3A4558
ATV71HC11N4, ATV71E5C11N4	—	VW3A4559
ATV71HC13N4, ATV71E5C13N4	—	VW3A4560
ATV71HC16N4, ATV71E5C16N4	—	VW3A4561
ATV71HC20N4, ATV71E5C20N4	—	VW3A4562
ATV71HC25N4, ATV71E5C25N4	Motor P 220 kW	VW3A4562
	Motor P 250 kW	VW3A4563
ATV71HC28N4, HC31N4, ATV71E5C28N4, E5C31N4	—	VW3A4564
ATV71HC40N4, ATV71E5C40N4	Motor P 355 kW	VW3A4565
	Motor P 400 kW	VW3A4566
ATV71HC50N4, ATV71E5C50N4	—	VW3A4567

● Applies to the following drives: ATV71H...N4, ATV71W...N4

DC chokes are used to reduce current harmonics in order to comply with standard 61000-3-2 for drives in which the line current is more than 16 A and less than 75 A.

Reduction of current harmonics

Optional DC chokes ⁽¹⁾

Type of drive Supply voltage	Three phase	
	200...240 V 50/60 Hz	380...480 V 50/60 Hz
ATV71H037M3	VW3A4501	—
ATV71H075M3	VW3A4503	—
ATV71HU15M3	VW3A4505	—
ATV71HU22M3	VW3A4506	—
ATV71HU30M3	VW3A4507	—
ATV71HU40M3, HU55M3	VW3A4508	—
ATV71HU75M3	VW3A4509	—
ATV71HD11M3X, HD15M3X	VW3A4510	—
ATV71HD18M3X, HD22M3X	VW3A4511	—
ATV71HD30M3X... HD45M3X	VW3A4512	—
ATV71●075N4, ATV71P075N4Z	—	VW3A4501
ATV71●U15N4, ATV71PU15N4Z	—	VW3A4502
ATV71●U22N4, ●U30N4, ATV71PU22N4Z, PU30N4Z	—	VW3A4503
ATV71●U40N4, ATV71PU40N4Z	—	VW3A4504
ATV71●U55N4, ATV71PU55N4Z	—	VW3A4505
ATV71●U75N4, ATV71PU75N4Z	—	VW3A4506
ATV71●D11N4	—	VW3A4507
ATV71●D15N4, ●D18N4	—	VW3A4508
ATV71●D22N4...●D37N4	—	VW3A4510
ATV71●D45N4...●D75N4	—	VW3A4511

(1) For ATV 71HD55M3X, HD75M3X and ATV 71HD90N4... HC50N4 drives, the choke is supplied as standard with the drive.

Passive filters

A passive filter is used to reduce current harmonics with total harmonic distortion factors of less than 16% or 10%. These factors may be less than 10% or 5% if used with a DC choke.

Type of drive	Three phase 400 V 50/60 Hz		Three phase 460 V 50/60 Hz	
	THDI 16% (1)	THDI 10% (2)	THDI 16% (1)	THDI 10% (2)
ATV71●075N4...●U30N4, ATV71P075N4Z...PU30N4Z	VW3A4601	VW3A4621	VW3A4 641	VW3A4 661
ATV71●U40N4,●U55N4, ATV71PU40N4Z, PU55N4Z	VW3A4602	VW3A4622	VW3A4 642	VW3A4 662
ATV71●U75N4,●D11N4, ATV71PU75N4Z	VW3A4603	VW3A4623	VW3A4 643	VW3A4 663
ATV71●D15N4	VW3A4604	VW3A4624	VW3A4 644	VW3A4 664
ATV71●D18N4, ●D22N4	VW3A4606	VW3A4626	VW3A4 645	VW3A4 665
ATV71●D30N4	VW3A4607	VW3A4627	VW3A4 646	VW3A4 666
ATV71●D37N4	VW3A4607	VW3A4627	VW3A4 647	VW3A4 667
ATV71●D45N4	VW3A4608	VW3A4628	VW3A4 647	VW3A4 668
ATV71●D55N4	VW3A4608	VW3A4628	VW3A4 648	VW3A4 668
ATV71●D75N4	VW3A4609	VW3A4629	VW3A4 648	VW3A4 668
ATV71HD90N4, ATV71E5D90N4	VW3A4609	VW3A4629	VW3A4 649	VW3A4 669
ATV71HC11N4, ATV71E5C11N4	VW3A4610	VW3A4630	VW3A4 649	VW3A4 669
ATV71HC13N4, ATV71E5C13N4	VW3A4611	VW3A4631	VW3A4 656	VW3A4 676
ATV71HC16N4, ATV71E5C16N4	VW3A4612	VW3A4632	VW3A4 650	VW3A4 670
ATV71HC20N4, HC25N4, ATV71E5C20N4, E5C25N4	VW3A4613	VW3A4633	VW3A4 651	VW3A4 671
ATV71HC25N4, ATV71E5C25N4	VW3A4611	VW3A4631	VW3A4 656	VW3A4 676
ATV71HC28N4, HC31N4, HC40N4, ATV71E5C28N4, E5C31N4, E5C40N4	VW3A4612	VW3A4632	VW3A4 650	VW3A4 670
ATV71HC40N4, ATV71E5C40N4	VW3A4619	VW3A4639	VW3A4 657	VW3A4 677
ATV71HC50N4, ATV71E5C50N4	VW3A4612	VW3A4632	VW3A4 651	VW3A4 671

● Applies to the following drives: ATV71H...N4, ATV71W...N4

(1) By adding a DC choke, we get: THD ≤ 10%

(2) By adding a DC choke, we get: THD ≤ 15%

These reduced current harmonics are obtained on condition that the THDu is < 20% and the RSCE > 66%.

Sinusoidal filters

Sinusoidal filters allow Altivar 71 drives to operate with longer motor cables (up to 1000 m).

Type of drive Supply voltage	Three phase	
	200...240 V 50/60 Hz	380...480 V 50/60 Hz
ATV71H037M3...HU15M3 (2)	VW3A5201	–
ATV71HU22M3, HU30M3	VW3A5202	–
ATV71HU40M3... HU75M3	VW3A5203	–
ATV71HD11M3X, HD15M3X	VW3A5204	–
ATV71HD18M3X, HD22M3X	VW3A5205	–
ATV71HD30M3X... HD45M3X	VW3A5206	–
ATV71HD55M3X, HD75M3X	VW3A5208	–
ATV71●075N4...●U40N4, ATV71P075N4Z...PU40N4Z (2)	–	VW3A5201
ATV71●U55N4, ATV71PU55N4Z	–	VW3A5202
ATV71●U75N4...●D15N4, ATV71PU75N4Z	–	VW3A5203
ATV71●D18N4...●D30N4	–	VW3A5204
ATV71●D37N4, ●D45N4	–	VW3A5205
ATV71●D55N4, ●D75N4	–	VW3A5206
ATV71 HD90N4, HC11N4, ATV71E5D90N4, E5C11N4	–	VW3A5207
ATV71 HC13N4, HC16N4, ATV71E5C13N4, E5C16N4	–	VW3A5208
ATV71 HC20N4, ATV71E5C20N4	–	VW3A5209
ATV71 HC25N4, ATV71E5C25N4	Motor P 220 kW	VW3A5209
	Motor P 250 kW	VW3A5210
ATV71 HC28N4, HC31N4, ATV71E5C28N4, E5C31N4	–	VW3A5210
ATV71 HC40N4, ATV71E5C40N4	Motor P 355 kW	VW3A5210
	Motor P 400 kW	VW3A5211
ATV71 HC50N4, ATV71E5C50N4	–	VW3A5211

● Applies to the following drives: ATV71H...N4, ATV71W...N4

(2) For these drive references, it is advisable to use a lower category motor with a sinusoidal filter

Above a certain motor cable length, it is advisable to insert a motor choke between the drive and the motor. This maximum length depends on the drive rating and the type of motor cable.

Type of drive	Max. motor cable length		Three phase	
	Shielded	Unshielded	200...240 V 50/60 Hz	380...480 V 50/60 Hz
ATV71H037M3...HU22M3	150 m	300 m	VW3A5101	–
ATV71HU30M3...HU75M3	200 m	260 m	VW3A5102	–
	300 m	300 m	VW3A5103	–
ATV71HD11M3X...HD22M3X	150 m	300 m	VW3A5103	–
ATV71HD30M3X... HD45M3X	150 m	300 m	VW3A5 04	–
ATV71HD55M3X, HD75M3X	150 m	300 m	VW3A5105	–
ATV71●075N4...●U40N4, ATV71P075N4Z...PU40N4Z	75 m	90 m	–	VW3A5101
	85 m	95 m	–	VW3A5102
	160 m	200 m	–	VW3A5103
ATV71●U55N4...●D18N4, ATV71PU55N4Z...PU75N4Z	85 m	95 m	–	VW3A5102
	160 m	200 m	–	VW3A5103
	200 m	300 m	–	VW3A5104
ATV71●D22N4...●D30N4	140 m	170 m	–	VW3A5103
	150 m	300 m	–	VW3A5104 (1)
ATV71●D37N4	97 m	166 m	–	VW3A5103
	200 m	300 m	–	VW3A5104 (1)
ATV71H●45N4...●D75N4	150 m	300 m	–	VW3A5104 (1)
ATV71HD90N4, ATV71E5D90N4	200 m	300 m	–	VW3A5104 (1)
ATV71HC11N4, HC13N4, ATV71E5C11N4, E5C13N4	150 m	250 m	–	VW3A5105 (1)
ATV71HC16N4...HC20N4, ATV71E5C16N4...E5C20N4	250 m	300 m	–	VW3A5106 (1)
ATV71HC25N4, ATV71E5C25N4	Motor P 220 kW	250 m	–	VW3A5106 (1)
	Motor P 250 kW	200 m	–	VW3A5107 (1)
ATV71HC28N4, HC31N4, ATV71E5C28N4, E5C31N4	200 m	250 m	–	VW3A5107 (1)
ATV71HC40N4, ATV71E5C40N4	Motor P 355 kW	200 m	–	VW3A5107 (1)
	Motor P 400 kW	250 m	–	VW3A5108 (1)
ATV71HC50N4, ATV71E5C50N4	250 m	300 m	–	VW3A5108 (1)

● Applies to the following drives: ATV71H...N4, ATV71W...N4

(1) 3 single phase chokes are included with the drive

Resistance braking units (integrated in ATV71 drives up to 160 kW)

ATV 71H●●●M3, ATV71H●●●M3X and ATV71H075N4...HC16N4 drives have a built-in braking transistor.

The braking resistor enables the Altivar 71 drive to operate while braking to a standstill or during slowdown braking, by dissipating the braking energy.

Supply voltage	Three phase 380...480 V	
Type of drive	ATV71HC20N4...HC28N4	ATV71HC31N4...HC50N4
Continuous power/Max (kW)	200/420	400/750
Reference	VW3A7101	VW3A7102

Braking resistors

Type of drive Supply voltage	Braking resistor 40 s cycle		Hoisting resistor 40 s cycle	
	200...240 V 50/60 Hz	380...480 V 50/60 Hz	200...240 V 50/60 Hz	380...480 V 50/60 Hz
ATV71H037M3, H075M3	VW3A7701	—	VW3A7801	—
TV71HU15M3, HU22M3	VW3A7702	—	VW3A7802	—
ATV71HU30M3, HU40M3	VW3A7703	—	VW3A7803	—
ATV71HU55M3, HU75M3	VW3A7704	—	VW3A7804	—
ATV71HD11M3X	VW3A7705	—	VW3A7805	—
ATV71HD15M3X	VW3A7706	—	VW3A7806	—
ATV71HD18M3X, HD22M3X	VW3A7707	—	VW3A7807	—
ATV71HD30M3X	VW3A7708	—	VW3A7808	—
ATV71HD37M3X, HD45M3X	VW3A7709	—	VW3A7809	—
ATV71HD55M3X	VW3A7713	—	VW3A7810	—
ATV71HD75M3X	VW3A7714	—	—	—
ATV71●075N4...●U40N4, ATV71P075N4Z...PU40N4Z	—	VW3A7701	—	VW3A7801
ATV71●U55N4, ●U75N4, ATV71PU55N4Z, PU75N4Z	—	VW3A7702	—	VW3A7802
ATV71●D11N4, ●D15N4	—	VW3A7703	—	VW3A7803
ATV71●D18N4...●D30N4	—	VW3A7704	—	VW3A7804
ATV71●D37N4	—	VW3A7705	—	VW3A7805
ATV71●D45N4...●D75N4	—	VW3A7707	—	VW3A7806
ATV71HD90N4, ATV71E5D90N4	—	VW3A7710	—	VW3A7811
ATV71HC11N4, HC13N4, ATV71E5C11N4, E5C13N4	—	VW3A7711	—	VW3A7812
ATV71HC16N4, ATV71E5C16N4	—	VW3A7712	—	VW3A7813
ATV71HC20N4, ATV71E5C20N4	—	VW3A7715	—	VW3A7814
ATV71HC25N4, HC28N4, ATV71E5C25N4, E5C28N4	—	VW3A7716	—	VW3A7815
ATV71HC31N4, HC40N4, ATV71E5C31N4, E5C40N4	—	VW3A7717	—	VW3A7816
ATV71HC50N4, ATV71E5C50N4	—	VW3A7718	—	VW3A7817

● Applies to the following drives: ATV71H...N4, ATV71W...N4

The network braking unit can be used to restore the following to the line supply:

- The energy from the motor
- The energy from the motors controlled by several drives connected on the same DC bus.

Network braking units

Line voltage		400 VAC	460 VAC
Braking power continuous (kW)	7	VW3A7201	—
	13	VW3A7202	—
	11	VW3A7203	—
	—	—	VW3A7231
	21,5	VW3A7204	VW3A7232
	26	VW3A7205	VW3A7233
	32	VW3A7206	VW3A7234
	38	VW3A7207/VW3A7208	VW3A7235/VW3A7236/VW3A7237/VW3A7238
	86	VW3A7209	VW3A7239
	120	VW3A7210	VW3A7240
	135	VW3A7211	—
	200	VW3A7212	—
	240	—	VW3A7241



Multilingual configuration software		For PC	For Pocket PC
Configuration of drives and starters		Altistart 48, Altivar (except Altivar 21) and TeSys model U	
Environment		Microsoft Windows ®	
Languages		English - French - German - Italian - Spanish	
References	PowerSuite CD-ROM (1)	VW3A8104	
	PowerSuite update CD-ROM	VW3A8105	
	Connection kit for serial port	VW3A8106	VW3A8111

(1) Contents: Software, technical documentation and the ABC configurator program

Accessories

4

Multilingual configuration software		Bluetooth® adaptor	
Description		Modbus - Bluetooth®	USB - Bluetooth® for PC
References		VW3A8114 (1)	VW3A8115

(1) Can also be used to communicate between a Twido PLC and the TwidoSoft software workshop

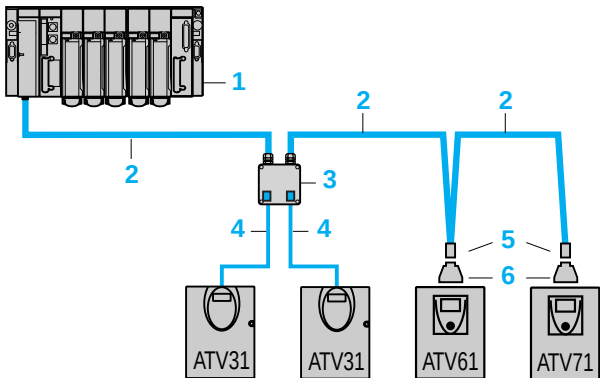
CANopen communication bus:
connection accessories



Drives	Tap junction VW3CANTAP2		CANopen adaptor	CANopen connector
	0.3 m cable	1 m cable		
ATV31	2 RJ45 connectors		–	–
ATV61 and ATV71	–		RJ 45 to 9-way male SUB-D	9-way female SUB-D output for 2 cables at 180°
References	VW3CANCARR03	VW3CANCARR1	VW3CANA71	VW3CANKCDF180T

CANopen cables

		CANopen LSZH	CANopen UL/IEC332-2	LSZH HD flexible CANopen
References	L = 50 m	TSXCANCA50	TSXCANCB50	TSXCANCD50
	L = 100 m	TSXCANCA100	TSXCANCB100	TSXCANCD100
	L = 300 m	TSXCANCA300	TSXCANCB300	TSXCANCD300



- 1 PLC
- 2 CANopen trunk cable TSXCANC●●
- 3 CANopen tap junction VW3CANTAP2
- 4 CANopen drop cable VW3CANCARR●●
- 5 CANopen connector VW3CANKCDF180T
- 6 CANopen adaptor VW3CANA71



Modbus communication bus: connection accessories

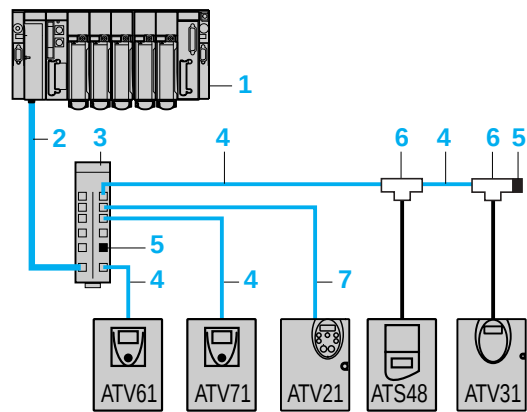


Starters/drives Altistart 48, Altivar 21, 31, 61, 71	Splitter box	Tap junction	Subscriber socket	Line terminators	
Description	10 connectors RJ45 and 1 screw terminal	3 screw terminals line terminator RC	2 SUB-D connectors 15-way female and 2 screw terminals RC line terminator	For connector RJ 45 R = 120 Ω, C = 1 nF	For screw terminals R = 120 Ω, C = 1 nF
References	LU9GC3	TSXSCA50	TSXSCA62	VW3A8306RC	VW3A8306DRC

Modbus connection

Starters/drives Altistart 48, Altivar 21, 31, 61, 71	Cables	Double shielded twisted pair cables RS 485		T-junction boxes
Description	2 connectors RJ 45	1 connector RJ45 and one stripped end	Supplied without connector	With integrated cable
References	L = 0.3 m	VW3A8306R03	–	VW3A8306TF03
	L = 1 m	VW3A8306R10	–	VW3A8306TF10
	L = 3 m	VW3A8306R30	VW3A8306D30	–
	L = 100 m	–	–	TSXCSA100
	L = 200 m	–	–	TSXCSA200
	L = 500 m	–	–	TSXCSA500

4



- Connection via splitter boxes and RJ 45 connectors
- 1 PLC
 - 2 Modbus cable depending on the type of PLC
 - 3 Modbus splitter box LU9GC3
 - 4 Modbus drop cables VW3A8306R●●
 - 5 Line terminators VW3A8306RC
 - 6 Modbus T-junction boxes VW3A8306TF●● (with cable)
 - 7 Modbus drop cable VW3A58306R●●

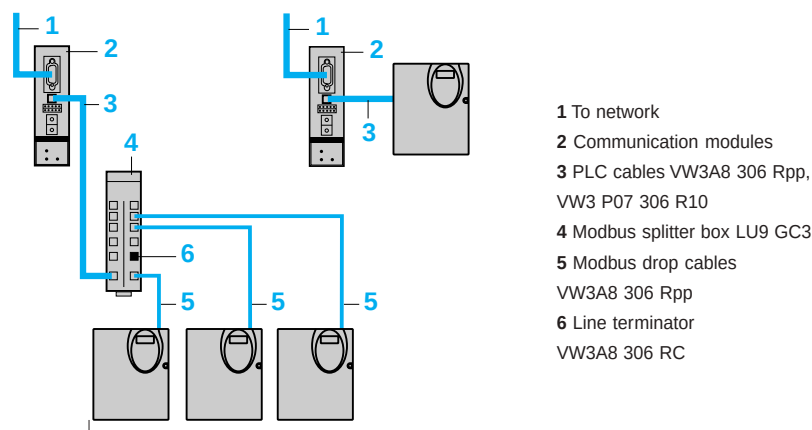
Altivar/Altistart

Dialogue and communication

Communication modules



Starters/drives		Ethernet/Modbus	DeviceNet/Modbus	Fipio/Modbus	ProfibusDP/Modbus	
Altistart 48/Altivar 31						
Parameter setting		–	–	–	Standard configurator	ABC configurator program
References	Bridge	TSXETG100	–	–	–	–
	Gateway	–	LUFP9	LUFP1	LA9P307	LUFP7
Cable references	L = 0.3 m	–	VW3A8306R03	VW3A8306R03	–	VW3A8306R03
	L = 1 m	–	VW3A8306R10	VW3A8306R10	VW3P07306R10	VW3A8306R10
	L = 3 m	VW3A8306D30	VW3A8306R30	VW3A8306R30	–	VW3A8306R30



Communication cards and modules

Ready



Drives Altivar 61, Altivar 71	Ethernet	Modbus/Uni-Telway	Fipio
Maximum number of drives controlled	–	Uni-Telway: 27 Modbus: 31	62
Transmission speed	10/100 Mbps	4800...19200 bps	1 Mbps
References	VW3A3310	VW3A3303	VW3A311

Drives Altivar 61, Altivar 71	Modbus Plus	Profibus DP	DeviceNet	INTERBUS
Maximum number of drives controlled	64	126	63	64
Transmission speed	1 Mbps	9600 bps...12 Mbps	125/250/500 Kbps	1 Mbps
References	VW3A3302	VW3A3307	VW3A3309	VW3A3304

Drives Altivar 61	LONWORKS	METASYS N2	APOGEE FLN	BACnet
Connector	1 removable 3-way screw terminal	1 removable 4-way screw terminal	1 removable 4-way screw terminal	1 removable 4-way screw terminal
Transmission speed	78 Kbps	–	–	–
References	VW3A3312	VW3A3313	VW3A3314	VW3A3315

For other connection accessories, please consult the "Soft starters and variable speed drives" catalogue.



Module type		For translators (amplifier for stepper motor)		For analog control servomotors (for asynchronous and brushless motors)				
Control outputs		RS 422		+/- 10 V				
Compatible with drives		Lexium 05		Lexium 05/17D				
Functions	Linear axes	–		Limited	Limited or infinite		Limited or infinite (1)	
	Slave axes	–		With static ratio	With dynamic ratio		–	
Frequency for each axis		187 kHz		500 kHz with incremental encoder, 200 kHz with absolute encoder (SSI serial or parallel output)				
Number of axes		1	2	2	4	2	4	3
Reference		TSXCFY11	TSXCFY21	TSXCAY21	TSXCAY41	TSXCAY22	TSXCAY42	TSXCAY33

(1) With linear interpolation on 2 or 3 axes



Module type		Servomotors with SERCOS® digital ring (for brushless motors)		
Control outputs		SERCOS® network ring		
Compatible with ranges		Lexium 17D		
Functions		Linear or infinite independent axes, slave axes with cam profile or ratio		
Processing		4 sets of axes with linear interpolation from 2 to 8 axes	4 sets of axes with linear and circular interpolation from 2 to 3 axes (2)	4 sets of axes with linear interpolation from 2 to 8 axes
Frequency for each axis		4 Mb SERCOS® network ring		
Number of axes		8 (3)	8 (3)	16 (4)
Reference		TSXCSY84	TSXCSY85	TSXCSY164

(2) TSXCSY85 module supplied with TJE trajectory editor: linear trajectories with links between segments according to polynomial or circular interpolation and circular trajectories.

(3) 8 real axes, 4 imaginary axes and 4 remote axes

(4) 16 axes (real axes, imaginary and remote axes)

Connection accessories for Modicon Premium and Quantum modules

Type		Fiber optic cables For Lexium 17D MDHA1...N00/A00 drives
Connection		Pre-equipped cable with SMA connectors
Reference	L = 0.3 m	990MCO00001
	L = 0.9 m	990MCO00003
	L = 1.5 m	990MCO00005
	L = 4.5 m	990MCO00015
	L = 16.5 m	990MCO00055
	L = 22.5 m	990MCO00075
	L = 37.5 m	990MCO00125

Motion control

Modules for Modicon Quantum platform



Module type	For analog control servomotors Single axis
Control outputs	RS 422
Compatible with drives	Lexium 17D
Functions	Master/slave position capture Synchronization of a master/slave, torque control
Frequency for each axis	200 kHz nominal, 500 kHz max. with incremental encoder
Number of axes	1 real axis, 1 remote axis
Reference	140MSB10100

4



Module type	Servomotors with SERCOS® digital ring (for brushless motors)
Control outputs	SERCOS® network ring
Compatible with ranges	Lexium 17D
Functions	Linear or infinite independent axes, slave axes with cam profile or ratio
Processing	4 sets of axes with linear interpolation from 2 to 8 axes
Frequency for each axis	4 Mb SERCOS® network ring
Number of axes	With MMF Start programming kit (1)
Reference	140MMS42501 (2)140MMS53502 (3)

(1) 8 real axes, 4 imaginary axes, 4 remote axes, 4 coordinate sets, 4 follower sets, cam profiles
(2) Maximum 22 axes including 16 real axes with assistance from our application services
(3) Maximum 32 axes including 22 real axes with assistance from our application services



Lexium 05

Motion control

Servo drives for BSH servo motors



Servo drive type		Digital for servo motors		
		Size 1	Size 2	Size 3
Supply voltage		110...120 VAC single phase		
Output current	Continuous (RMS)	4 A	8 A	15 A
	Maximum (Peak)	10 A	17 A	28 A
Safety function		Integrated "Power Removal"		
Braking resistor		Integrated		
EMC filter		Integrated		
Reference with Integrated CANopen (1)		LXM05AD10F1	LXM05AD17F1	LXM05AD28F1



Servo drive type		Digital for servo motors					
		Size 1	Size 2	Size 3	Size 1	Size 2	Size 3
Supply voltage		200...240 VAC single phase			200...240 VAC 3-phase		
Output current	Continuous (RMS)	4 A	8 A	15 A	4 A	8 A	17 A
	Maximum (Peak)	10 A	17 A	28 A	10 A	17 A	42 A
Safety function		Integrated "Power Removal"					
Braking resistor		Integrated					
EMC filter		Integrated			Not integrated		
Reference with Integrated CANopen (1)		LXM05AD10M2	LXM05AD17M2	LXM05AD28M2	LXM05AD10M3X	LXM05AD17M3X	LXM05AD42M3X



Servo drive type		Digital for servo motors			
		Size 2	Size 2	Size 3	Size 4
Supply voltage		380...480 VAC 3-phase		380...480 VAC 3-phase	
Output current	Continuous (RMS)	6 A	9A	15 A	25 A
	Maximum (Peak)	14 A	22 A	34 A	57 A
Safety function		Integrated "Power Removal"			
Braking resistor		Integrated			
EMC filter		Integrated			
Reference with Integrated CANopen (1)		LXM05AD14N4	LXM05AD22N4	LXM05AD34N4	LXM05AD57N4

(1) To order a Lexium 05 servo drive with PROFIBUS DP bus, replace "A" in the reference by "B". Example LXM05AD14N4 become LXM05BD14N4.

Motion control

Additional EMC input filters



Supply voltage			Single phase	3-phase
Maximum cable length		Category C3	40 m	40 m
		Category C2	20 m	20 m
Reference	Drives	Size 1	LXM05AD10F1, LXM05AD10M2	LXM05AD10M3X
	Filters		VW3A31401	VW3A31402
	Drives	Size 2	LXM05AD17F1, LXM05AD17M2	LXM05AD17M3X, LXM05AD14N4
	Filters		VW3A31403	VW3A31404
	Drives	Size 3	LXM05AD28F1, LXM05AD28M2	LXM05AD42M3X, LXM05AD22N4, LXM05AD34N4
	Filters		VW3A31405	VW3A31406
	Drives	Size 4		LXM05AD57N4
	Filters		–	VW3A31407

4

Line inductances



Supply voltage			Single phase		3-phase	
			110...120 V	200...240 V	200...240 V	380...480 V
References	Drives	Size 1	LXM05AD10F1	LXM05AD10M2	LXM05AD10M3X	
	Inductances		VZ1L007UM50	VZ1L007UM50	VW3A4551	–
	Drives	Size 2	LXM05AD17F1	LXM05AD17M2	LXM05AD17M3X	LXM05AD10N4, LXM05AD22N4
	Inductances		VZ1L018UM20	VZ1L018UM20	VW3A4552	VW3A4551
	Drives	Size 3	LXM05AD28F1	LXM05AD28M2	LXM05AD42M3X	LXM05AD34N4
	Inductances		VZ1L018UM20	VZ1L018UM20	VW3A4553	VW3A4552
	Drives	Size 4				LXM05AD57N4
	Inductances		–	–	–	VW3A4552

Holding brake controller

Controller type	Holding brake
Power supply	24 VDC
Maximum current	1.6 A
Maximum power	50 W
Degree of protection	IP20
Reference	VW3M3103

External braking resistors

Resistor type			External braking for Lexium 05 drives						
Resistance			10 Ω	27 Ω				72 Ω	
Power			400 W	100 W	200 W	400 W	100 W	200 W	400 W
Reference (1)	cable length	L = 0.75 m	VW3 A7601R07	A7602R07	A7603R07	A7604R07	A7605R07	A7606R07	A7607R07
		L = 2 m	VW3 A7601R20	A7602R20	A7603R20	A7604R20	A7605R20	A7606R20	A7607R20
		L = 3 m	VW3 A7601R30	A7602R30	A7603R30	A7604R30	A7605R30	A7606R30	A7607R30

(1) In order to select the braking resistor, you need to calculate the continuous and peak power to be dissipated in it. Please consult our Lexium 05 catalog

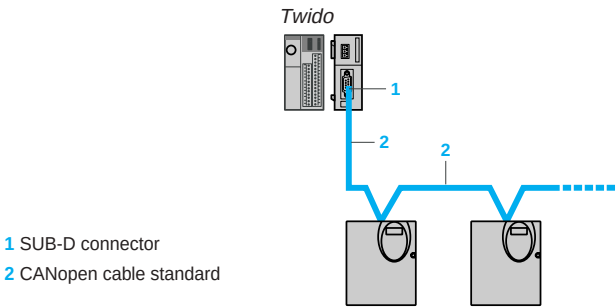


▲ Launch 1st quarter 2006

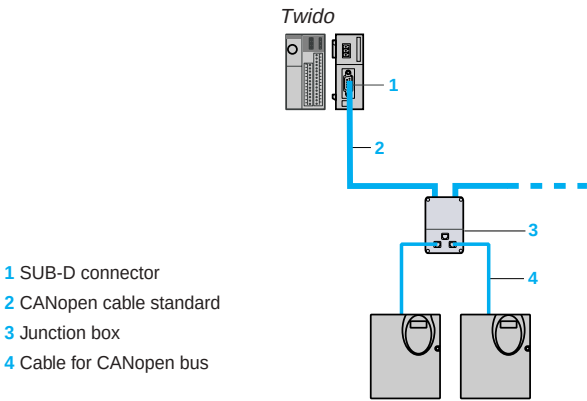
Multilingual configuration software		For PC
Configuration of drives and softstarters		Lexium 05 / Altivar / Altistart
Environment		Microsoft Windows ®
Languages		English - French - German - Italian - Spanish
Reference	PowerSuite CD-ROM	(1) ▲
	Connection kit	VW3A8106 ▲

(1) A dedicated PowerSuite software for Lexium is delivered with each servo drive.

CANopen communication bus connection



Connection type		Via spring terminal (CN1)			
		Connector IP20	Cable		
Connector type		Bended at 90° SUB-D	–		
Type of cable		–	Halogen free	UL certification	For heavy duty
References		TSXCANKCDF90	–	–	–
	L = 50 m	–	TSXCANCA50	TSXCANCB50	TSXCANCD50
	L = 100 m	–	TSXCANCA100	TSXCANCB100	TSXCANCD100
	L = 300 m	–	TSXCANCA300	TSXCANCB300	TSXCANCD300



Connection type		Via RJ45 connector	
		Junction box	Cable
Description		2 RJ45 ports	2 RJ45 connectors
References		VW3CANTAP2	–
	L = 0.3 m	–	VW3CANCARR03
	L = 100 m	–	VW3CANCARR1

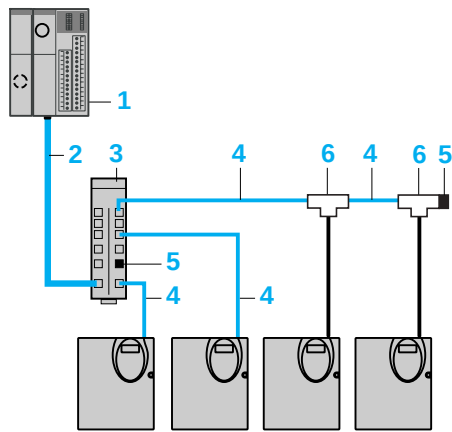
Motion control

Modbus serial link connection accessories



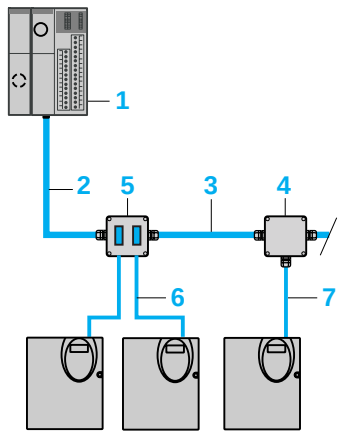
Drives			Lexium 05		
Connection type	Description		Splitter box with 10 RJ45 connectors and 1 screw terminal block	Junction box for drop cable VW3A8306D30	Subscriber socket for drop cable VW3A8306
	Reference		LU9GC3	TSXSCA50	TSXSCA62
Line terminators	For RJ 45 connector		R = 120 Ω, C = 1 nf		R = 150 Ω, C = 1 nf
	Reference		VW3A8306RC		VW3A8306R
	For screw terminals		R = 120 Ω, C = 1 nf		R = 150 Ω, C = 1 nf
	Reference		VW3A8306DRC		VW3A8306DR
T-junction boxes	With integrated cable 0.3 m		VW3A8306TF03		
	With integrated cable 1 m		VW3A8306TF10		
Cables	Description		2 RJ 45 connectors		
	Reference	0.3 m	VW3A8306R03		
		1 m	VW3A8306R10		
		3 m	VW3A8306R30		
RS 485 shielded twisted double pair cables	Description		1 RJ45 connector and one stripped end		
	Reference	3 m	VW3A8306D30		
	Description		Supplied without connector		
	Reference	100 m	TSXCSA100		
		200 m	TSXCSA200		
		500 m	TSXCSA500		

Connection with RJ45 splitter box and screw terminals



- 1 Controller Twido
- 2 Cable for controller Twido serial link
- 3 Modbus splitter box LU9 GC3
- 4 Modbus drop cables VW3 A8 306R●●
- 5 Line terminators VW3 A8 306RC
- 6 Modbus T-junction boxes VW3 A8 306TF●● (with cable)

Connection with junction box or subscriber sockets



- 1 Controller Twido
- 2 Cable for controller Twido serial link
- 3 Modbus cables TSX CSA●00
- 4 T-junction box TSX SCA 50
- 5 Subscriber socket TSX SCA 62
- 6 Modbus drop cables VW3 A8 306
- 7 Modbus drop cables VW3 A8 306 D30

Connection via screw terminals

In this case, a Modbus drop cable (VW3 A8 306D30) and line terminators (VW3 A8 306DRC) are used.

BSH servo motors

Reference	Torque at standstill
BSH 0551T	0.5 Nm
BSH 0552M	0.9 Nm
BSH 0552P	0.9 Nm
BSH 0552T	0.9 Nm
BSH 0553M	1.3 Nm
BSH 0553P	1.3 Nm
BSH 0553T	1.3 Nm
BSH 0701P	1.4 Nm
BSH 0701T	1.4 Nm
BSH 0702M	2.1 Nm
BSH 0702P	2.1 Nm
BSH 0702T	2.1 Nm
BSH 0703M	2.8 Nm
BSH 0703P	2.8 Nm
BSH 0703T	2.8 Nm
BSH 1001T	3.4 Nm
BSH 1002P	5.5 Nm
BSH 1003P	7.8 Nm

Lexium 05 servo drives

	110/120 V single phase, with integrated EMC filter				200/240 V single phase, with integrated EMC filter			
	LXM 05●				LXM 05●			
Nominale speed	D10F1 0.4 kW	D17F1 0.65 kW	D28F1 1.4 kW	Nominale speed	D10M2 0.75 kW	D17M2 1.2 kW	D28M2 2.5 kW	
3000 min ⁻¹	1.4 Nm			6000 min ⁻¹	1.4 Nm			
				1500 min ⁻¹	2.2 Nm			
				4000 min ⁻¹	2.7 Nm			
3000 min ⁻¹	1.8 Nm	2.7 Nm		6000 min ⁻¹	1.8 Nm			
				1500 min ⁻¹	3.5 Nm			
				4000 min ⁻¹	3.2 Nm			
3000 min ⁻¹		3.3 Nm		6000 min ⁻¹		3.3 Nm		
				3000 min ⁻¹	2.6 Nm			
3000 min ⁻¹	2.4 Nm			6000 min ⁻¹		3.2 Nm		
				1500 min ⁻¹	5.6 Nm			
				3000 min ⁻¹	4.6 Nm	5.6 Nm		
3000 min ⁻¹		4.1 Nm		6000 min ⁻¹		4.1 Nm	6.7 Nm	
				1500 min ⁻¹	8.5 Nm			
				3000 min ⁻¹		7.2 Nm	10.3 Nm	
3000 min ⁻¹			7.4 Nm	6000 min ⁻¹			7.4 Nm	
2500 min ⁻¹			8.5 Nm	6000 min ⁻¹			8.5 Nm	
				2000 min ⁻¹			16 Nm	
				2000 min ⁻¹			19.7 Nm	

			200/240 V three phase, without integrated EMC filter LXM 05●						380/480 V three phase, with integrated EMC filter LXM 05●		
Reference	Torque at standstill	Nominale speed	D10M3X 0.75 kW	D17M3X 1.4 kW	D42M3X 3.2 kW	Nominale speed	D14N4 1.4 kW	D22N4 2 kW	D34N4 3 kW	D57N4 6 kW	
BSH 0551T	0.5 Nm	6000 min ⁻¹	1.4 Nm								
BSH 0552M	0.9 Nm	1500 min ⁻¹	2.2 Nm								
BSH 0552P	0.9 Nm	4000 min ⁻¹	2.7 Nm			6000 min ⁻¹	2.7 Nm				
BSH 0552T	0.9 Nm	6000 min ⁻¹	1.8 Nm								
BSH 0553M	1.3 Nm	1500 min ⁻¹	3.5 Nm								
BSH 0553P	1.3 Nm	4000 min ⁻¹	3.2 Nm			6000 min ⁻¹	3.9 Nm				
BSH 0553T	1.3 Nm	6000 min ⁻¹		3.3 Nm							
BSH 0701M	1.4 Nm	1500 min ⁻¹	2.6 Nm								
BSH 0701P	1.4 Nm	3000 min ⁻¹	2.6 Nm								
BSH 0701T	1.4 Nm	6000 min ⁻¹	2.4 Nm	3.2 Nm							
BSH 0702M	2.1 Nm	1500 min ⁻¹	5.6 Nm								
BSH 0702P	2.1 Nm	3000 min ⁻¹	4.6 Nm	5.6 Nm		6000 min ⁻¹	5.6 Nm				
BSH 0702T	2.1 Nm	6000 min ⁻¹			6.7 Nm						
BSH 0703M	2.8 Nm	1500 min ⁻¹	8.5 Nm			3000 min ⁻¹	8.5 Nm				
BSH 0703P	2.8 Nm	3000 min ⁻¹		7.2 Nm		6000 min ⁻¹		8.7 Nm			
BSH 0703T	2.8 Nm	6000 min ⁻¹			10.2 Nm						
BSH 1001M	3.4 Nm					2000 min ⁻¹	7.1 Nm				
BSH 1001P	3.4 Nm	2000 min ⁻¹		7.1 Nm		4000 min ⁻¹		8.5 Nm			
BSH 1001T	3.4 Nm	4000 min ⁻¹			8.5 Nm						
BSH 1002M	5.5 Nm					2000 min ⁻¹	13.3 Nm				
BSH 1002P	5.5 Nm	2000 min ⁻¹		11.2 Nm		4000 min ⁻¹		13.9 Nm			
BSH 1002T	5.5 Nm	4000 min ⁻¹			16 Nm						
BSH 1003M	7.8 Nm					2000 min ⁻¹		23 Nm			
BSH 1003P	7.8 Nm	2000 min ⁻¹			23 Nm	4000 min ⁻¹			23 Nm		
BSH 1004P	9.3 Nm	2000 min ⁻¹			35.7 Nm	3000 min ⁻¹			23.4 Nm	35.7 Nm	
BSH 1401P	11.4 Nm					2500 min ⁻¹			28 Nm		
BSH 1401T	11.4 Nm	3000 min ⁻¹			27.1 Nm						
BSH 1402M	19.2 Nm					1250 min ⁻¹			57 Nm		
BSH 1402P	19.2 Nm	1500 min ⁻¹			45.4 Nm	2500 min ⁻¹			38.6 Nm	54.3 Nm	
BSH 1402T	19.2 Nm	3000 min ⁻¹			29.6 Nm						
BSH 1403M	25.4 Nm					1250 min ⁻¹			70.3 Nm	84.3 Nm	
BSH 1403P	25.4 Nm					3000 min ⁻¹				62.2 Nm	
BSH 1404M	32.1 Nm					1500 min ⁻¹				102 Nm	
BSH 1404P	32.1 Nm					3000 min ⁻¹				63.8 Nm	
BSH 2051M	36 Nm					1500 min ⁻¹				82 Nm	

1.4 Nm

This value corresponds to the peak torque at standstill that can be provided by the Lexium 05 servo drive/BSH servo motor combination.

Availability of BSH 055 and BSH 205 servomotors: 1st quarter 2006.

● replaced by A for the CANopen/analog inputs version, replaced by B for the Profibus DP version.

Motion control

BSH servo motors for Lexium 05

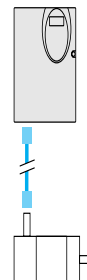
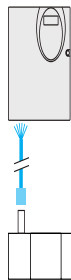


To order a BSH motor, please use these references

Reference to be completed :		BSH	●●●	●	●	●	●	●	●	●	A
Flange size	55 mm		055								
	70 mm		070								
	100 mm		100								
	140 mm		140								
	205 mm		205								
Length (Number of magnet stacks)	1			1							
	2			2							
	3			3							
	4			4							
Winding type	Lowest speed				M						
	Medium speed				P						
	Highest speed				T						
Shaft (1)	w/o key (smooth) : IP40 (IP65)					0					
	with key : IP40 (IP65)					1					
	w/o key : IP65					2					
	with key IP65					3					
Encoder	Absolute SinCos, single turn (128 periods per revolution)						1				
	Absolute SinCos multi turn (4096 revolutions)						2				
Brake	w/o brake							A			
	with brake							F			
Connection System	Straight connector								1		
	right angle turnable connector								2		
Mounting	International standard mounting										A

(1) Other possibilities to be detailed: see www.telemecanique.com

Connecting cables



Cable type		Power cable Equipped with 1 connector (motor side)			Encoder cable Equipped with 2 connectors
Servo motor type	BSH...	055●● / 070●● / 100●● / 1401P / 1402M / 1402P / 1403M / 1404M	1401T / 1402T / 1403P / 1404P	2051M	All type
Servo drive type	LXM05...	All type	D42M3X / D57N4	D57N4	All type
Composition		4x1.5 mm ² + 2x1 mm ²	4x2.5 mm ² + 2x1 mm ²	4x4 mm ² + 2x1 mm ²	5x(2x2.5 mm ²) + 2x0.5 mm ²
Reference	L = 3 m	VW3M5101R30	VW3M5102R30	VW3M5103R30	VW3M8101R30
	L = 5 m	VW3M5101R50	VW3M5102R50	VW3M5103R50	VW3M8101R50
	L = 10 m	VW3M5101R100	VW3M5102R100	VW3M5103R100	VW3M8101R100
	L = 15 m	VW3M5101R150	VW3M5102R150	VW3M5103R150	VW3M8101R150
	L = 20 m (2)	VW3M5101R200	VW3M5102R200	VW3M5103R200	VW3M8101R200

(2) For cable lengths of > 20 m, see www.telemecanique.com.

Lexium 17D

Motion control

Drives for SER and BPH/BPL brushless motors



Drive type		Digital for SER and BPH/BPL brushless motors Lexium 17D					
Supply voltage		208...480 VAC 3-phase 50/60 Hz (230 VAC single phase authorized with derating)					
Output current	Continuous	1.5 A	3 A	6 A	10 A	20 A	
	Maximum (discontinuous, 5 s)	3 A	6 A	10 A	20 A	40 A	
Anti-start		With or without					
Braking resistor		Integrated					
EMC filter		Integrated					
Reference (1)		MDHA1004●00	MDHA1008●00	MDHA1017●00	MDHA1028●00	MDHA1056●00	

(1) For a drive without anti-start function, replace the ● at the end of the reference with N, or for one with integrated anti-start function, with A



Drive type		Digital for BPH brushless motors Lexium 17D HP	
Supply voltage		208...480 VAC 3-phase	
Output current	Continuous	40 A	70 A
	Maximum (discontinuous, 5 s)	80 A	140 A
Anti-start		Integrated	
Braking resistor		Not integrated	
EMC filter		Not integrated	
Reference		MDHA1112A00	MDHA1198A00

Control and connectivity of Lexium 17D drives

Drive connectivity	Connectivity type	
Integrated	+/- 10 V, Pulse/direction, CANopen	Reference
Via an optional card (1 slot available)	High-speed SERCOS® digital ring	AM0SER001V000
	Fipio fieldbus	AM0FIP001V000
	Modbus Plus network	AM0MBP001V000
	Profibus DP fieldbus	AM0PBS001V000
	CANopen machine bus (standard medium)	AM02CA001V000
	Card with 14 I/O for controlling the integrated position indexer	AM0INE001V000

Motion control

Additional EMC input filters



Supply voltage	3-phase 208...480 VAC	
Type of Lexium 17D HP drive	MDHA1112	MDHA1198
Input rms current	42 A	75 A
Reference	AM0EMC118	AM0EMC212

Line reactors



Supply voltage	3-phase 208...480 VAC	
Type of Lexium 17D HP drive	MDHA1112	MDHA1198
Input current	60 A	75 A
Reference (1)	AM0CHK170	AM0CHK212

(1) Must be ordered with the drive, unless an isolation transformer is being used with IT connection

External braking resistors

Resistor type	External braking for Lexium 17D/17 D HP drives				
Drive type	MDHA1004/1008		MDHA1017/1028/1056	MDHA1112	MDHA1198
Resistance	33 Ω		33 Ω	15 Ω	10 Ω
Power	250 W		500W	1500W	860 W
Reference (1)	Standard	AM0RFE001V025	AM0RFE001V050	AM0RFE001V150	AM0RFE002V086
	UL (Recognized)	AM0RFE003V025	AM0RFE003V050	AM0RFE003V150	–

(1) In order to select the braking resistor, you need to calculate the continuous and peak power to be dissipated in it. Please consult our Lexium 17 catalog

Motor reactor

Supply voltage	3-phase 208...480 VAC
Type of Lexium 17D drive	MDHA1004/1008/1017/1028/1056
Use	Reactor for drive-motor cable length > 25 m
Reference	AM0FIL001V056



Unilink software is used to configure, set parameters and make adjustments on Lexium MHDA drives according to the associated SER/BPH brushless motor and the requirements of the application. During these debugging phases, the PC-compatible terminal, supporting the Unilink software in Windows 95/98, 2000, NT 4.0 or XP, is connected to the MHDA drives via a serial link (9-way SUB-D connector marked X6).

- There are three possible configurable operating modes:
- +/- 10 V analog control mode controlled by Premium or Quantum motion control module.
 - Off line mode with integrated position indexer controlled by:
 - 5 I/2 O integrated in the Lexium 17D drive (or by 14 I/8 O option card)
 - CANopen, Fipio, Modbus Plus or Profibus DP bus
 - SERCOS® mode, high-speed digital ring on optical fiber.

The initial screen providing access to the Unilink software services and functions is divided into three zones:

- 1 Banner at the top of the screen for accessing the main functions.
- 2 Mimic diagram for accessing configuration/parameter setting and realtime display of the various drive values.
- 3 Zone at the bottom of the screen indicating the drive status.

Configuration and adjustment software		“Lexium motion tools” for PC
Drive configuration		Lexium 17D
Environment		Microsoft Windows ®
Language		English, French, German, Italian and Spanish
Reference	CD-ROM (1)	AM0CSW001V350

(1) Contents: Unilink software + documentation

Accessories

Type of accessory	Backup key
Use	Saving and instant retrieval of drive parameters (without a PC)
Reference	AM0PCM001V000

Motion control

SER brushless motors for Lexium 17D



Motor type			SER brushless type			
Compatible Lexium 17 drive type			MDHA1004●00	MDHA1008●00	MDHA1017●00	MDHA1028●00
	Torque at standstill continuous/peak	Mechanical speed				
Reference (1)	1.1/2.5 Nm	6000 rpm	SER39A4L7S●●●●●			
	1.1/4 Nm	6000 rpm		SER39A4L7S●●●●●		
	2.2/2.4 Nm	6000 rpm		SER39B4L3S●●●●●		
	2.2/8 Nm	6000 rpm			SER39B4L3S●●●●●	
	2.9/4.7 Nm	6000 rpm		SER39C4L3S●●●●●		
	2.9/9.4 Nm	6000 rpm			SER39C4L3S●●●●●	
	4.2/8.2 Nm	5500 rpm		SER3BA4L5S●●●●●		
	4.5/15 Nm	5500 rpm			SER3BA4L5S●●●●●	
	4.6/9.2 Nm	6000 rpm			SER3BA4L3S●●●●●	
	4.6/15.3 Nm	6000 rpm				SER3BA4L3S●●●●●
	6/12 Nm	6000 rpm			SER3BB4L3S●●●●●	
	6.6/20 Nm	6000 rpm				SER3BB4L3S●●●●●
	6.6/15.8 Nm	5800 rpm			SER3BB4L5S●●●●●	
	6.6/25 Nm	5800 rpm				SER3BB4L5S●●●●●
	8.3/16 Nm	2500 rpm		SER3BC4L7S●●●●●		
	8.6/17 Nm	4800 rpm			SER3BC4L5S●●●●●	
	10/28 Nm	4800 rpm				SER3BC4L5S●●●●●
	10/32 Nm	2500 rpm			SER3BC4L7S●●●●●	
	13.4/24 Nm	2750 rpm			SER3BD4L7S●●●●●	
	13.4/29 Nm	5000 rpm				SER3BD4L5D●●●●●
	13.4/38 Nm	2750 rpm				SER3BD4L7S●●●●●

(1) Complete the references using the table below

To order an SER motor, complete the above references										
Reference to be completed:		SER39/3B	A/B/C/D	4L	3/5/7	S/D	●●	●	●	●
Sensor integrated in the motor	Resolver with 1 pair of poles						RA			
	SinCos multi-turn absolute encoder						MO			
Shaft seal	IP41	without holding brake						A		
		with holding brake						1		
	IP56	without holding brake						B		
		with holding brake						2		
Without speed reduction gear									O	
	Shaft extension	Untapped								1
With speed reduction gear	Type	PLE80, PLE120, PLE160							(2)	
	Reduction ratio	3:1, 5:1, 8:1								(2)

(2) For an SER motor with speed reduction gear: see the "Lexium 17D motion control" catalog.

Lexium 17D Motion control

Connection cables between Lexium 17D drive and SER motor

Lexium 17			MHDA drive		Cable length			
					L = 3 m	L = 10 m	L = 20 m/30 m (3)	30 m < L < 75 m
Cable type (1)	Power	MDHA1004A00	LXACPAAA●●●1					(4)
		MDHA1008A00						
		MDHA1017A00	LXACPAAB●●●1					
		MDHA1028A00						
Cable type (2)	Resolver	LXACFACA●●●1					(4)	
	Sincos Hiperface encoder	LXACFABA●●●1					(4)	

- (1) Cables equipped with 1 connector (motor end) and 1 connector to be fitted (drive end)
 (2) Cables equipped with connectors at both ends
 (3) For cable lengths between drive and motor > 25 m, use of a motor reactor is compulsory, placed as close to the drive as possible
 (4) For cable lengths > 30 m, please consult your Schneider Electric agency

Connection cables between Lexium 17D drive and SER motor

Cable type		Power		Resolver	SinCos Hiperface encoder
Composition		4x1.5 mm ² + 2x1 mm ²	4x2.5 mm ² + 2x1 mm ²	—	
Cables equipped with		1 connector at the motor end (1 connector to be fitted at the drive end)		1 connector at each end	
Reference	L = 3 m	LXACPAAA0031	LXACPAAB0031	LXACFACA0031	LXACFACA0031
	L = 5 m	LXACPAAA0051	LXACPAAB0051	LXACFACA0051	LXACFABA0051
	L = 10 m	LXACPAAA0101	LXACPAAB0101	LXACFACA0101	LXACFABA0101
	L = 20 m	LXACPAAA0201	LXACPAAB0201	LXACFACA0201	LXACFABA0201
	L = 30 m	—	—	LXACFACA0301	LXACFABA0301

Motion control

BPH brushless motors for Lexium 17D



Motor type			BPH brushless type						
Compatible Lexium 17 drive type	MDHA		1004A00	1008A00	1017A00	1028A00	1056A00	1112A	1198A
Reference (1)	Torque at standstill continuous/peak	Mechanical speed BPH							
	0.4/1.1 Nm	8000 rpm	0552S5000000						
	0.9/1.7 Nm	6000 rpm	0751N50000A0						
	1.3/3.4 Nm	6000 rpm		0751N50000A0					
	1.3/2.5 Nm	6000 rpm	0752N50000A0						
	2.3/4.8 Nm	6000 rpm		0752N50000A0					
	3.7/7.2 Nm	6000 rpm		0952N50000A0					
	4.3/13.4 Nm	6000 rpm			0952N50000A0				
	6/13.4 Nm	6000 rpm			0953N50000A0				
	6/20.3 Nm	6000 rpm				0953N50000A0			
	7.4/13.6 Nm	6000 rpm			1152N50000A0				
	7.4/19.3 Nm	6000 rpm				1152N5000000			
	6.8/13.5 Nm	6000 rpm			1153N50000A0				
	10.5/19.4 Nm	6000 rpm				1153N50000A0			
	11.4/18 Nm	4000 rpm				1442N50000A0			
	12/30 Nm	4000 rpm				1442N50000A0			
	14.5/24.2 Nm	4000 rpm				1423N50000A0	1423N50000A0		
	17/42 Nm	4000 rpm					1902N50000A0		
	25/37.5 Nm	4000 rpm					1903K50000A0		
	36/57 Nm	4000 rpm					1904K50000A0		
	46/76.2 Nm	4000 rpm						1907K50000A0	
	75/157 Nm	4000 rpm						1907K50000A0	
	90/163 Nm	4000 rpm						190AK50000A0	
	100/230 Nm	4000 rpm							0190AK50000A0

(1) Complete the references using the tables below

To order a BPH motor, complete the above references						
Reference to be completed:	BPH0552S5	●	●●	●	0	●
Sensor integrated in the motor	Resolver with 1 pair of poles	U				
Holding brake	Without		A2			
	With		F2			
Shaft extension	Key			C		
	Untapped			L		
Degree of protection	IP65 (casing) IP54 (shaft extension)				0	

To order a BPH motor, complete the above references						
Reference to be completed:	BPH0751N5....BPH190AK5	●	●●	●	A	●
Sensor integrated in the motor	Resolver with 1 pair of poles	M				
	Multi-turn high-resolution absolute encoder, Sincos Hiperface (4096 revolutions)	A				
	Single-turn high-resolution absolute encoder, Sincos Hiperface (4096 revolutions)	B				
Holding brake	Without		A2			
	With		F2			
Shaft extension	Key			C		
	Untapped			L		
Degree of protection	IP65 (casing and shaft extension)					1
	IP67 (casing and shaft extension)					2

Lexium 17D

Motion control

BPL compact brushless motors for Lexium 17D



Motor type			BPL brushless type	
Compatible Lexium 17 drive type			MDHA1008A00	MDHA101700
Reference (1)	Torque at standstill continuous/peak	Mechanical speed		
	1.1/2.4 Nm	6000 rpm	BPL0751V5●A2●A●	
	1.7/3.5 Nm	6000 rpm	BPL0951V5●A2●A●	
	2.8/7.3 Nm	6000 rpm		BPL0753N5●A2●A●
	2/5.5 Nm	6000 rpm		BPL0951V5●A2●A●
	5.4/13.4 Nm	6000 rpm		BPL0953N5●A2●A●

(1) Complete the references using the tables below

To order a BPL motor, complete the above references									
Reference to be completed:		BPL0751V5...953N5			●		A2	●	A
Sensor integrated in the motor	Resolver with 1 pair of poles		M						
	Multi-turn high-resolution absolute encoder, Sincos Hiperface (4096 revolutions)		A						
	Single-turn high-resolution absolute encoder, Sincos Hiperface		B						
Holding brake	Without						A2		
Shaft extension	Key							C	
	Untapped							L	
Degree of protection	IP65								1
(casing and shaft extension)	IP67								2

Motion control

Connection cables between Lexium 17D drives and BPH/BPL motor

Equipped with a connector at the motor end and a connector to be fitted at the drive end

Cable type		Power			
Composition		4x1.5 mm ² + 2x1 mm ²	4x2.5 mm ² + 2x1 mm ²		
Drive type		MDHA1004	MDHA1004/1008/ 10017/1028	MDHA1028/1056	MDHA1112/1198 (1)
Motor type		BPH0552	BPH0751...1153 BPL0751...953	BPH1422...1904	BPH1907...190A
Reference	L = 5 m	AGOKIT001M005	AGOKIT018M005	AGOKIT019M005	AGOKIT020M005
	L = 10 m	—	—	—	AGOKIT020M010
	L = 15 m	AGOKIT001M015	AGOKIT018M015	AGOKIT019M015	AGOKIT020M015
	L = 25 m (2)	AGOKIT001M025	AGOKIT018M025	AGOKIT019M025	AGOKIT020M025
	L = 50 m (2)	—	AGOKIT018M050	AGOKIT019M050	AGOKIT020M050
	L = 75 m (2)	—	AGOKIT018M075	AGOKIT019M075	AGOKIT020M075

(1) Cable supplied without connector to be fitted at the drive end, connection is made to the drive via screw terminals

(2) For cable lengths between drive (MDHA1004...1056) and motor > 25 m, use of an AM0FIL001V056 motor reactor is compulsory, placed as close to the drive as possible

Cable type		Resolver	SinCos Hiperface encoder	
Composition		4x2.5 mm ² + 2x1 mm ²		
Drive type		MDHA1004	MDHA●●●●	MDHA●●●●
Motor type		BPH0552	BPH0751...190A BPL0751...953	BPH0751...190A BPL0751...953
Reference	L = 5 m	AGOKIT025M005	AGOKIT024M005	AGOKIT023M005
	L = 15 m	AGOKIT025M015	AGOKIT024M015	AGOKIT023M015
	L = 25 m (2)	AGOKIT025M025	AGOKIT024M025	AGOKIT023M025
	L = 50 m (2)	—	AGOKIT024M050	AGOKIT023M050
	L = 75 m (2)	—	AGOKIT024M075	AGOKIT023M075

(2) For cable lengths between drive (MDHA1004...1056) and motor > 25 m, use of an AM0FIL001V056 motor reactor is compulsory, placed as close to the drive as possible

Connection cables between Lexium 17 D drives and BPH/BPL motor

Equipped with 2 connectors at the motor end and drive end

Cable type		Power		Resolver	SinCos Hiperface encoder
Drive type		MDHA1004/1008/ 10017/1028	MDHA1004/1008/ 10017/1028	MDHA●●●●	MDHA●●●●
Motor type		BPH0751...1153 BPL0751...953	BPH1422...1904K	BPH0751...190AK BPL0751...953	BPH0751...190AK BPL0751...953
Reference	L = 10 m	AGOFRU015M010	AGOFRU016M010	AGOFRU014M010	AGOFRU013M010

Accurate and reliable control of motors

TeSys range provide you more *simplicity, compactness, openness* and *flexibility*

... so many evolutions and new items to aid your productivity.

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- A wide range of components.
- Solutions for a variety of power control applications: lighting, capacitor switching, heating, changeover contactor pairs, resistive loads, upstream protection.

The essential guide

A simplified selection guide enabling you to quickly select motor starters.

Contents

Motor control components

TeSys contactors 5/2 to 5/11

- Contactors, **models k, d, F, b**
- Variable composition contactors, **model CV**

TeSys protection components 5/12 to 5/31

- Thermal-magnetic circuit-breakers
- Magnetic circuit-breakers
- Fuse carriers, switch-disconnector-fuses
- Thermal overload relays
- Electronic thermal overload relays
- Electronic overload relays
- Multifunction protection relays
- Switch disconnectors **Mini Vario and Vario**

TeSys starters 5/32 to 5/39

- Combination motor starters
- Starter-controller, **Model U**
- Controller, **Model U**
- Enclosed motor starters

TeSys installation system 5/40 to 5/41

- For motor starter components with spring terminals, **Quickfit** technology

Components for power control applications 5/42 to 5/48

- Lighting, capacitor switching, heating, changeover contactor pairs

TeSys U - LU9

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Introducing the 1st **intelligent** starter capable of integrating motor control, control and changeover functions in a unit 45 mm wide! **Simple** in its modular format, it is also **open** to standard buses and can monitor your applications via the web.

Applications

- Industry: ideal solution when the motor starter needs to be decentralized in the machine or the process



Connections				
■ screw clamp terminals				
Rated operational current	Ie max AC-3 (Ue ≤ 440V)	6 A	9 A	12 A
	Ie AC-1 (θ ≤ 40° C)	-	20 A	-
Rated operational power	220/240 V	1.5 kW	2.2 kW	3 kW
in category AC3	380/400 V...415/440 V	2.2 kW	4 kW	5.5 kW
	660/690 V...500 V	3 kW	4 kW	4 kW
Contactor type ^{(1)*}	~	LC1-K06••	LC1-K09••	LC1-K12••
	≡	LP1-K06•• or LP4-K06••	LP1-K09 or LP4-K09••	LP1-K12 or LP4-K12••
Reversing contactor type *	~	LC2-K06	LC2-K09	LC2-K12
with mechanical interlock	≡	LP2-K06 or LP5-K06	LP2-K09 or LP5-K09	LP2-K12 or LP5-K12
■ spring terminals				
Add the figure 3 before the voltage code. Example LC1-K0610•• becomes LC1-K06103••				
■ Faston connectors, 1 x 6.35 or 2 x 2.8				
Add the figure 7 before the voltage code. Example LC1-K0610•• becomes LC1-K06107••				
■ solder pins for printed circuit boards				
Add the figure 5 before the voltage code. Example LC1-K0610•• becomes LC1-K06105••				

(1) Basic reference, to be completed by adding 01 for N/C auxiliary contact, or 10 for N/O auxiliary contact.
* Basic reference to be completed by adding the coil voltage

Standard control circuit voltages																
~ supply																
Contactors LC1-K (0.8...1.15 Uc) (0.85...1.1Uc)																
Volts	12	20	24	36	42	48	110	115	120	127	200/208	220/230	230	230/240		
50/60 Hz	J7	Z7	B7	C7	D7	E7	F7	FE7	G7	FC7	L7	M7	P7	U7		
Volts	256	277	380/400		400	400/415		440	480	500	575	600	660/690			
50/60 Hz	W7	UE7	Q7		V7	N7		R7	T7	S7	SC7	X7	Y7			
Example of complete reference LC1-K0910P7																
≡ supply																
Contactors LP1-K (0.8...1.15 Uc)																
Volts	12	20	24	36	48	60	72	100	110	125	155	174	200	220	230	240 250
Code	JD	ZD	BD	CD	ED	ND	SD	KD	FD	GD	PD	QD	LD	MD	MPD	MUD UD
Coil with integral suppression device available, add 3 to the code required. Example JD3																
Low consumption																
Contactors LP4-K (0.7...1.30 Uc), coil suppression as standard																
Volts	12	20		24		48		72		110		120				
Code	JW3		ZW3		BW3		EW3		SW3		FW3		GW3			
Example of complete reference LC1-K0910BD																





Auxiliary contact blocks

■ instantaneous, screw clamp connections

	■ for LC1, LP1-K, LP4			■ for LC1, LP1-K				
Composition	2N/O	- 2N/C	1N/O 1N/C	4N/O	3N/O 1N/C	2N/C 2N/C	1N/O 3N/C	- 4N/C
Reference	LA1-KN20	LA1-KN02	LA1-KN11	LA1-KN40	LA1-KN31	LA1-KN22	LA1-KN13	LA1-KN04

■ electronic time delay

Relay outputs, with common point changeover contact, $\sim$ or $\equiv$ 24...48, 2 A maximum

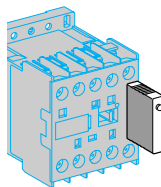
Control voltage 0.85...1.1Uc

Maximum switching capacity 250 VA or 150 W

Operating temperature -10...+ 60°C

Reset time: 1.5 s for 0.5 s after the time delay period

Type	On-delay							
Timing range	1...30 s							
Composition	1							
Voltage	$\sim$ or $\equiv$ 24...48 V				$\sim$ 110...240			
Reference	LA2-KT2E				LA2-KT2U			



Suppressor modules

For LC1, LP1-K

Type	Varistor ($\sim$ and $\equiv$)				Diode ($\equiv$) + zener		RC ($\sim$)
Voltage	12...24 V	32...48 V	50...129 V	130...250 V	12...24 V	32...48 V	220...250 V
Reference	LA4-KE1B	LA4-KE1E	LA4-KE1FC	LA4-KE1UG	LA4-KC1B	LA4-KC1E	LA4-KA1U



Connections

■ screw clamp terminals or connectors

Rated operational voltage		690 V				
Rated operational current	Ie max AC-3 (Ue ≤ 440V)	9 A	12 A	18 A	25 A	32 A
	Ie AC-1 (θ ≤ 60° C)	25 A	32 A	40 A	50 A	
Rated operational power	220/240 V	2.2 kW	3 kW	4 kW	5.5 kW	7.5 kW
in category AC3	380/400 V	4 kW	5.5 kW	7.5 kW	11 kW	15 kW
	415/440 V	4 kW	5.5 kW	9 kW	11 kW	15 kW
	500 V	5.5 kW	7.5 kW	10 kW	15 kW	18.5 kW
	660/690 V	5.5 kW	7.5 kW	10 kW	15 kW	18.5 kW
	1000 V	-	-	-	-	-
Contactor type *		LC1-D09	LC1-D12	LC1-D18	LC1-D25	LC1-D32
Reversing contactor type * with mechanical interlock		LC2-D09	LC2-D12	LC2-D18	LC2-D25	LC2-D32

■ spring terminals ⁽¹⁾

Add the figure 3 before the voltage code. Example **LC1-D09P7** becomes **LC1-093P7**

■ lug-clamps ⁽²⁾

Add the figure 6 before the voltage code. Example **LC1-D09P7** becomes **LC1-096P7**

■ Faston connectors ⁽³⁾ 2 x 6.35 (power) and 1 x 6.35 (control) up to D12 only

Add the figure 9 before the voltage code. Example **LC1-D09P7** becomes **LC1-099P7**

* Basic reference to be completed by adding the coil voltage



(1)



(2)



(3)

Standard control circuit voltages

~ supply

Volts	24	42	48	110	115	220	230	240	380	400	415	440	500
Contactors LC1-D09...D50 (coils D115 and D150 with integral suppression device fitted as standard)													
50/60 Hz	B7	D7	E7	F7	FE7	M7	P7	U7	Q7	V7	N7	R7	-
Contactors LC1-D40...D115													
50 Hz	B5	D5	E5	F5	FE5	M5	P5	U5	Q5	V5	N5	R5	S5
60 Hz	B6	-	E6	F6	-	M6	-	U6	Q6	-	-	R6	-

--- supply

Volts	12	24	36	48	60	72	110	125	220	250	440		
Contactors LC1-D09...D38 (coils with integral suppression device fitted as standard)													
U 0.7...1.25 Uc	JD	BD	CD	ED	ND	SD	FD	GD	MD	UD	RD		
Contactors LC1-D40...D95													
U 0.85...1.1 Uc	JD	BD	CD	ED	ND	SD	FD	GD	MD	UD	RD		
U 0.75...1.2 Uc	JW	BW	CW	EW	-	SW	FW	-	MW	-	-		
Contactors LC1-D115 and D150 (coils with integral suppression device fitted as standard)													
U 0.75...1.2 Uc	-	BD	-	ED	ND	SD	FD	GD	MD	UD	RD		

Low consumption

Contactors LC1-D09...D38 (coils with integral suppression device fitted as standard)

Volts ---	5	12	20	24	48	110	120	250					
U 0.7...1.25 Uc	AL	JL	ZL	BL	EL	FL	ML	UL					

Example of complete reference **LC1-D09P7**



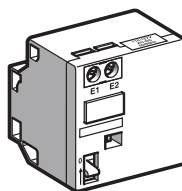
1 000 V on ~ supply, 690 V on ∞ supply							
38 A	40 A	50 A	65 A	80 A	95 A	115 A	150 A
	60 A	80 A		125 A		200 A	
9 kW	11 kW	15 kW	18.5 kW	22 kW	25 kW	30 kW	40 kW
18.5 kW	18.5 kW	22 kW	30 kW	37 kW	45 kW	55 kW	75 kW
18.5 kW	22 kW	25/30 kW	37 kW	45 kW	45 kW	59 kW	80 kW
18.5 kW	22 kW	30 kW	37 kW	55 kW	55 kW	75 kW	90 kW
18.5 kW	30 kW	33 kW	37 kW	45 kW	45 kW	80 kW	100 kW
-	22 kW	30 kW	37 kW	45 kW	45 kW	75 kW	90 kW
LC1-D38	LC1-D40	LC1-D50	LC1-D65	LC1-D80	LC1-D95	LC1-D115	LC1-D150
LC2-D38	LC2-D40	LC2-D50	LC2-D65	LC2-D80	LC2-D95	LC2-D115	LC2-D150

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Mounting accessories for 3-pole reversing contactors

2 identical contactors with screw clamp terminals or connectors, horizontally mounted

Mechanical interlock	Set of connections	Mechanical interlock
■ with an electrical interlocking kit for the contactors		
LC1-D09...D38	LAD-9R1V	included
■ with integral electrical interlocking		
LC1-D40...D65	LA9-D6569	LA9-D4002
LC1-D80 and D95 (~)	LA9-D8069	LA9-D4002
LC1-D80 and D95 (∞)	LA9-D8069	LA9-D8002
LC1-D115 and D150	LA9-D11569	LA9-D11502
■ without electrical interlocking		
LC1-D09...D38	LA9-9R1	included
LC1-D40...D65	LA9-D6569	LA9-D50978
LC1-D80 and D95 (~)	LA9-D8069	LA9-D50978
LC1-D80 and D95 (∞)	LA9-D8069	LA9-D80978



Mechanical latch blocks

Clip-on front mounting, manual or electrical unlatching control

For use on contactor	Reference	Standard control circuit voltages
LC1-D40...D65 3P ~ or ∞, LC1-D65 4P ~, LC1-D65 4P ∞	LA6-DK10•	B E F M Q
LC1-D80...D150 3P ~, LC1-D80 and D115 3P ~, LC1-D115 4P ∞	LA6-DK20•	B E F M Q
LC1-D09...D38 ~ or ∞, LC1-DT20...DT40 ~ or ∞	LA6-6K10•	B E F M Q



Auxiliary contact blocks

■ instantaneous, for connection by screw clamp terminals

■ front mounting

Composition	Reference	Composition	Reference	Composition	Reference
N/O N/C		N/O N/C		N/O N/C	
1 -	LAD-N10	1 1	LAD-N11	2 2	LAD-N22
- 1	LAD-N01	2 -	LAD-N20	1 3	LAD-N13
		- 2	LAD-N02	4 -	LAD-N40
				- 4	LAD-N04
				3 1	LAD-N31

■ side mounting

Composition	Reference	Composition	Reference
N/O N/C		N/O N/C	
1 1	LAD-8N11	1 1	LAD-8N11
2 -	LAD-8N20	2 -	LAD-8N20
- 2	LAD-8N02	- 2	LAD-8N02

■ time delay

■ front mounting	Type	Range	Reference
On-delay		0.1...3 s	LAD-T0
		0.1...30 s	LAD-T2
		10...180 s	LAD-T4
Off-delay		0.1...3 s	LAD-R0
		0.1...30 s	LAD-R2
		10...180 s	LAD-R4

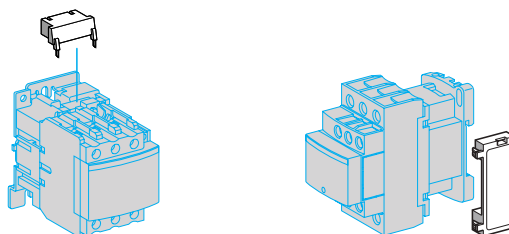
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Maximum number of auxiliary contacts that can be fitted

Contactors

Type	Instantaneous auxiliary contact blocks					Time delay
	Number of poles and size	Side mounting	Front mounting			Front mounting
			1 contact	2 contacts	4 contacts	
~	3P LC1-D09...D38	1 on LH side and	-	1	or 1	or 1
	LC1-D40...D95 (50/60 Hz)	1 on each side or	2	and 1	or 1	or 1
	LC1-D40...D95 (50 or 60 Hz)	1 on each side and	2	and 1	or 1	or 1
	LC1-D115 and D150	1 on LH side	-	and 1	or 1	or 1
	4P LC1-DT20...DT40	1 on LH side	-	1	or 1	or 1
	LC1-D65 and D80	1 on each side or	1	or 1	or 1	or 1
	LC1-D115	1 on each side and	1	or 1	or 1	or 1
---	3P LC1-D09...D38	-	-	1	or 1	or 1
	LC1-D40...D95	-	1	or 1	or 1	or 1
	LC1-D115 and D150	1 on LH side and	-	1	or 1	or 1
	4P LC1-DT20...DT40	-	-	1	or 1	or 1
	LP1-D65 and D80	-	2	and 1	or 1	or 1
	LC1-D115	1 on each side	-	and 1	or 1	or 1
Low Consumption	3P LC1-D09...D38	-	-	1	-	-
	4P LC1-DT20...DT40	-	-	1		





Suppressor modules

Varistors (peak limiting)

Protection provided by limiting the transient voltage to 2 Uc max.

Maximum reduction of transient voltage peaks.

Slight increase in drop-out time (1.1 to 1.5 times the normal time)

Mounting	For use with contactor	Type		Reference
	Rating	V ~	V ==	
Clip-on	D09...D38 (3P)	12...24 V	-	LAD-4VE
	DT20...DT40	50...127 V	-	LAD-4VG
		110...240 V	-	LAD-4VU
Screw fixing	D40...D115 (3P)	24...48 V	-	LA4-DE2E
	and	50...127 V	-	LA4-DE2G
	D65...D115 (4P)	110...250 V	-	LA4-DE2U
	D40...D115 (3P)	-	24...48 V	LA4-DE3E
	and	-	50...127 V	LA4-DE3G
	D65...D115 (4P)	-	110...250 V	LA4-DE3U

Diodes

No overvoltage or oscillating frequency.

Increase in drop-out time (6 to 10 times the normal time).

Polarised component.

Screw fixing	D40...D95 (3P)	-	24...250 V	LA4-DC3U
	D65 and D80 (4P)	-	-	

Bidirectional peak limiting diode

Protection provided by limiting the transient voltage to 2 Uc max.

Maximum reduction of transient voltage peaks.

Clip-on	D09...D38 (3P)	24 V	-	LAD-4TB
	DT20...DT40	72 V	-	LAD-4TS
Screw fixing	D40...D95 (3P)	24 V	-	LA4-DB2B
	D65 and D80 (4P)	72 V	-	LA4-DB2S
	D40...D95 (3P)	-	24 V	LA4-DB3B
	D65 and D80 (4P)	-	72 V	LA4-DB3S

RC circuits (Resistor-Capacitor)

Effective protection for circuits highly sensitive to "high frequency" interference.

For use only in cases where the voltage is virtually sinusoidal, i.e. less than - 5% total harmonic distortion.

Voltage limited to 3 Uc max and oscillating frequency limited to 400 Hz max.

Slight increase in drop-out time (1.2 to 2 times the normal time)

Clip-on	D09...D38 (3P)	12...24 V	-	LAD-4RCE
	DT20...DT40	110...240 V	-	LAD-4RCU
Screw fixing	D40...D150 (3P)	24...48 V	-	LA4-DA2E
	and	50...127 V	-	LA4-DA2G
	D65...D115 (4P)	110...240 V	-	LA4-DA2U
		380...415 V	-	LA4-DA2N



Rated operational current	le max AC-3 ($U_e \leq 440V$)	185 A	225 A	265 A	330 A
	le AC-1 ($\theta \leq 40^\circ C$)	275 A	315 V	350 A	400 A
Rated operational voltage		1 000 V	1 000 V	1 000 V	1 000 V
Number of poles		3 or 4	3 or 4	3 or 4	3 or 4
Rated operational power	220/240 V	55 kW	63 kW	75 kW	100 kW
in category AC3	380/400 V	90 kW	110 kW	132 kW	160 kW
	415 V	100 kW	110 kW	140 kW	180 kW
	440 V	100 kW	110 kW	140 kW	200 kW
	500 V	110 kW	129 kW	160 kW	200 kW
	660/690 V	110 kW	129 kW	160 kW	220 kW
	1000 V	100 kW	100 kW	147 kW	160 kW
Contactor type*		LC1-F185	LC1-F225	LC1-F265	LC1-F330
Reversing contactor type*		LC2-F185	LC2-F225	LC2-F265	

* Basic reference to be completed by adding the coil voltage

Standard control circuit voltages

~ supply

Volts	24	48	110	115	120	208	220	230	240	380	400	415	440
Contactors LC1-F115...F225(0.85...1.1UC)													
50 Hz (coil LX1)	B5	E5	F5	FE5	-	-	M5	P5	U5	Q5	V5	N5	-
60 Hz (coil LX1)	-	E6	F6	-	G6	L6	M6	-	U6	Q6	-	-	R6U7
40...400 Hz (coil LX9)	-	E7	F7	FE7	G7	L7	M7	P7	U7	Q7	V7	N7	R7
Contactors LC1-F265...F330U7													
40...400 Hz (coil LX1)	B7	E7	F7	FE7	G7	L7	M7	P7	U7	Q7	V7	N7	R7
Contactors LC1-F400...F630U7													
40...400 Hz (coil LX1)	-	E7	F7	FE7	G7 ⁽¹⁾	L7	M7	P7	U7	Q7	V7	N7	R7
Contactor LC1-F780U7													
40...400 Hz (coil LX1)	-	-	F7	FE7	F7	L7	M7	P7	U7	Q7	V7	N7	R7
Contactor LC1-F800U7													
40...400 Hz (coil LX1)	-	-	FE7	FE7	FE7	-	P7	P7	P7	V7	V7	V7	V7Y7

= supply

Volts	24	48	110	125	220	230	250	400	440
Contactors LC1-F115...F330(0.85...1.1UC)									
(coil LX4-F)	BD	ED	FD	GD	MD	MD	UD	-	RD
Contactors LC1-F400...F630(0.85...1.1UC)									
(coil LX4-F)	-	ED	FD	GD	MD	-	UD	-	RD
Contactor LC1-F780(0.85...1.1UC)									
(coil LX4-F)	-	-	FD	GD	MD	-	UD	-	RD
Contactor LC1-F800(0.85...1.1UC)									
(coil LX4-F)	-	-	FW	FW	MW	MW	-	QW	-

Example: For a 630 A contactor with a 110 V ~ coil, order **LC1-F630F7**

(1) F7 for LC1-F630



	400 A	500 A	630 A	780 A	800 A
	500 A	700 A	1 000 A	1 600 A	1 000 A
	1 000 V	1 000 V	1 000 V	1 000 V	1 000 V
	2, 3 or 4	2, 3 or 4	2, 3 or 4	3 or 4	3
	110 kW	147 kW	200 kW	220 kW	250 kW
	200 kW	250 kW	335 kW	400 kW	450 kW
	220 kW	280 kW	375 kW	425 kW	450 kW
	250 kW	295 kW	400 kW	425 kW	450 kW
	257 kW	355 kW	400 kW	450 kW	450 kW
	280 kW	335 kW	450 kW	475 kW	475 kW
	185 kW	335 kW	450 kW	450 kW	450 kW
	LC1-F400	LC1-F500	LC1-F630	LC1-F780	LC1-F800
For customer assembly					

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Auxiliary contact blocks

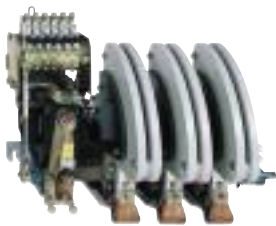
■ instantaneous						dust & damp protected contacts		■ time delay 1N/O + 1 N/C		
Composition	Reference	Composition	Reference	Composition	Reference	Composition	Reference	Type	Range	Reference
N/O N/C		N/O N/C		N/O N/C		N/O N/C				
1 -	LAD-N10	1 1	LAD-N11	2 2	LAD-N22	2 - - -	LA1-DX20	On-delay	0.1...3 s	LAD-T0
- 1	LAD-N01	2 -	LAD-N20	1 3	LAD-N13	2 2 - -	LA1-DY20		0.1...30 s	LAD-T2
		- 2	LAD-N02	4 -	LAD-N40	2 - 2 -	LA1-DZ40		10...180 s	LAD-T4
				- 4	LAD-N04	2 - 1 1	LA1-DZ31		1...30 s	LAD-S2
				3 1	LAD-N31			Off-delay	0.1...3 s	LAD-R0
				2 2	LAD-C22				0.1...30 s	LAD-R2
									10...180 s	LAD-R4

Mounting accessories for 3-pole reversing contactors for motor control

2 identical contactors, horizontally mounted

Mechanical interlock with an electrical interlocking kit for the contactors

Contactor type	Set of connections	Mechanical interlock
LC1-F115	LA9-FF976	LA9-FF970
LC1-F150	LA9-F15076	LA9-FF970
LC1-F185	LA9-FG976	LA9-FG970
LC1-F225	LA9-F22576	LA9-FG970
LC1-F265	LA9-FH976	LA9-FJ970
LC1-F330	LA9-FJ976	LA9-FJ970
LC1-F400	LA9-FJ976	LA9-FJ970
LC1-F500	LA9-FK976	LA9-FJ970
LC1-F630 or LC1-F800	LA9-FL976	LA9-FL970



Rated operational current	Ie max AC-3 (Ue ≤ 440V)	750 A	1000 A	1500 A	1800 A
	Ie AC-1 (θ ≤ 40° C)	800 A	1250 V	2000 A	2750A
Rated operational voltage		1 000 V	1 000 V	1 000 V	1 000 V
Number of poles		1 to 4	1 to 4	1 to 4	1 to 4
Rated operational power	220/240 V	220 kW	280 kW	425 kW	500 kW
in category AC3	380/400 V	400 kW	500 kW	750 kW	900 kW
	415 V	425 kW	530 kW	800 kW	900 kW
	440 V	450 kW	560 kW	800 kW	900 kW
	500 V	500 kW	600 kW	700 kW	900 kW
	660/690 V	560 kW	670 kW	750 kW	900 kW
	1000 V	530 kW	530 kW	670 kW	750 kW
4 instantaneous contact configurations					
2 N/C + 2 N/O, 3 N/O + 1 N/C, 1 N/O + 3 N/C or 4 N/O					
Contactor type*		LC1-BL	LC1-BM	LC1-BP	LC1-BR

* Basic reference to be completed by adding the coil voltage, followed by the instantaneous contact configuration.

Standard control circuit voltages (for other voltages, please consult your Regional Sales Office)												
Volts	48	110	125	127	220	230	240	380	400	415	440	500
~ 50...400 Hz	-	F	-	G	M	P	U	Q	V	N	R	S
---	ED	FD	GD	-	MD	-	-	-	-	-	RD	-

Example: To order a 1500 A contactor with 127 V ~ coil with 3 N/O + 1 N/C, select **LC1-BP33G31**

Mounting accessories		
Description	For contactor	Reference
Bar support bracket	LC1-BL to BR	LA9-B103
for mounting on 120 or 150 mm centres		
Mechanical interlock and locking device components	LC1-B	EZ2-LB0601



Reference to compiled by the customer

Contactor type, according to required use																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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Example 1/ for single-phase capacitor switching: 400 V - 80 A - 1 N/O pole - Control circuit 220 V / 50 Hz. 1 N/O and 1 N/C auxiliary contacts: **CV1-BF1F0ZM511**

2/ for heating circuits, d.c. supply 800 V - 150 A - 2 N/O poles - Control circuit 48 V , 1 N/O + 1 N/O On-delay auxiliary contacts: **CV3-BG2W0ZED10J**


Thermal-magnetic circuit-breakers GV2-ME and GV2-P for connection by screw clamp terminals
GV2-ME with pushbutton control, GV2-P control by rotary knob

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3									Setting range	Magnetic	Reference	
400/415 V			500 V			690 V			of thermal	tripping		
P	Icu	Ics ⁽¹⁾	P	Icu	Ics ⁽¹⁾	P	Icu	Ics ⁽¹⁾	trips	current		
kW	kA		kW	kA		kW	kA		A	A (d ± 20%)		
-	-	-	-	-	-	-	-	-	0.1...0.16	1.5	GV2-ME01	GV2-P01
0.06	★	★	-	-	-	-	-	-	0.16...0.25	2.4	GV2-ME02	GV2-P02
0.09	★	★	-	-	-	-	-	-	0.25...0.40	5	GV2-ME03	GV2-P03
0.12	★	★	-	-	-	0.37	★	★	0.40...0.63	8	GV2-ME04	GV2-P04
0.18	★	★	-	-	-	-	-	-	0.40...0.63	8	GV2-ME04	GV2-P04
0.25	★	★	-	-	-	0.55	★	★-	0.63...1	13	GV2-ME05	GV2-P05
0.37	★	★	0.37	★	★	-	-	-	1...1.6	22.5	GV2-ME06	GV2-P06
0.55	★	★	0.55	★	★	0.75	★	★	1...1.6	22.5	GV2-ME06	GV2-P06
-	-	-	0.75	★	★	1.1	★	★	1...1.6	22.5	GV2-ME06	GV2-P06
0.75	★	★	1.1	★	★	1.5	3	75	1.6...2.5	33.5	GV2-ME07	
0.75	★	★	1.1	★	★	1.5	8	100	1.6...2.5	33.5		GV2-P07
1.1	★	★	1.5	★	★	2.2	3	75	2.5...4	51	GV2-ME08	
1.1	★	★	1.5	★	★	2.2	8	100	2.5...4	51		GV2-P08
1.5	★	★	2.2	★	★	3	3	75	2.5...4	51	GV2-ME08	
1.5	★	★	2.2	★	★	3	3	100	2.5...4	51		GV2-P08
2.2	★	★	3	50	100	4	3	75	4...6.3	78	GV2-ME10	
2.2	★	★	3	★	★	4	6	100	4...6.3	78		GV2-P10
3	★	★	4	10	100	5.5	3	75	6...10	138	GV2-ME14	
3	★	★	4	50	100	5.5	6	100	6...10	138		GV2-P14
4	★	★	5.5	10	100	7.5	3	75	6...10	138	GV2-ME14	
4	★	★	5.5	50	100	7.5	6	100	6...10	138		GV2-P14
5.5	15	50	7.5	6	75	9	3	75	9...14	170	GV2-ME16	
5.5	★	★	7.5	42	75	9	6	100	9...14	170		GV2-P16
-	-	-	-	-	-	11	3	75	9...14	170	GV2-ME16	
-	-	-	-	-	-	11	6	100	9...14	170		GV2-P16
7.5	15	50	9	6	75	15	3	75	13...18	223	GV2-ME20	
7.5	50	50	9	10	75	15	4	100	13...18	223		GV2-P20
9	15	40	11	4	75	18.5	3	75	17...23	327	GV2-ME21	
9	50	50	11	10	75	18.5	4	100	17...23	327		GV2-P21
11	15	40	15	4	75	-	-	-	20...25	327	GV2-ME22 ⁽²⁾	
11	50	50	15	10	75	-	-	-	20...25	327		GV2-P22
15	10	50	18.5	4	75	22	3	75	24...32	416	GV2-ME32	
15	50	50	18.5	10	75	22	4	100	24...32	416		GV2-P32

★ > 100 kA

(1) as % of Icu

(2) combined with a recommended contactor

Thermal-magnetic circuit-breakers GV2-ME for connection by spring terminals

 Add the figure 3 to the end of the reference. Example **GV2-ME223** (available up to GV2-ME22)



Accessories

Combination block

For mounting on	LC1-K or LP1-K	LC1-D09...D38	LAD-31 and LC1-D09...D38
	GV2-AF01	GV2-AF3	GV2-AF4

Sets of 3-pole busbars

63 A	Pitch	45 mm	54 mm	72 mm
Number of tap-offs	2	GV2-G245	GV2-G254	GV2-G272
	3	GV2-G345	GV2-G354	
	4	GV2-G445	GV2-G454	GV2-G472
	5		GV2-G554	

Protective end cover

For unused busbar outlets	GV1-G10	
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Terminal blocks

For supply to one or more GV2-G busbar sets	connection from the top	can be fitted with current limiter GV1-L3 (GV2-ME and GV2-P)
	GV1-G09	GV1-G05

Padlockable external operator for GV2-P (150 to 290 mm)

Padlocking	In "On" and "Off" position	In "Off" position
Handle	black	red
Legend plate	blue	yellow
	IP 54	
	GV2-AP01	GV2-AP02

Padlocking device

For all GV2 devices	For use with up to 6 padlocks (padlocks not supplied) Ø 6 mm shank max
	GV2-V03

5

Add-on blocks

Contact blocks

Contact types	N/O or N/C	N/O + N/C	N/O + N/O	(fault) + N/C	N/C + N/O	C/O common point
Instantaneous auxiliary contacts						
Mounting front	GV-AE1	GV-AE11	GV-AE20			
LH side		GV-AN11	GV-AN20			
Fault signalling contact + instantaneous auxiliary contact						
LH side			GV-AD1010	GV-AD1001	GV-AD0110	
				GV-AD0101		
Short-circuit signalling contact						
LH side						GV-AM11

Electric trips

Undervoltage or shunt trips ⁽¹⁾		
Side mounting (1 block on RH side of circuit-breaker)	50 Hz	60 Hz
Voltage 24 V	GV-A•025	GV-A•026
48 V	GV-A•055	GV-A•056
100 V	GV-A•107	
100...110 V		GV-A•107
110...115 V	GV-A•115	GV-A•116
120...127 V	GV-A•125	
127 V		GV-A•115
200 V	GV-A•207	
200...220 V		GV-A•207
220...240 V	GV-A•225	GV-A•226
380...400 V	GV-A•385	GV-A•386
415...440 V	GV-A•415	
415 V		GV-A•416

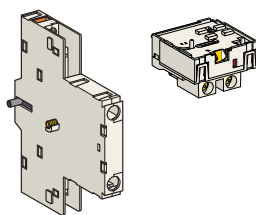
(1) Undervoltage trips: replace the • with U, shunt trips: replace the • with S



Thermal-magnetic circuit-breakers GV3-ME for connection by screw clamp terminals										
Pushbutton control										
Standard power ratings of 3-phase motors 50/60 Hz in category AC-3									Setting range	Reference
400/415 V			500 V			660/690 V			of thermal	
P	Icu	Ics ⁽¹⁾	P	Icu	Ics ⁽¹⁾	P	Icu	Ics ⁽¹⁾	trips	
kW	kA		kW	kA		kW	kA		A	
0.37	100	100	0.37	100	100	0.75	100	100	1...1.6	GV3-ME06
0.55	100	100	0.55	100	100	1.1	100	100		
			0.75	100	100					
0.75	100	100	1.1	100	100	1.5	100	100	1.6...2.5	GV3-ME07
1.1	100	100	1.5	100	100	2.2	4	100	2.5...4	GV3-ME08
1.5	100	100	2.2	100	100	3	4	100		
2.2	100	100	3	100	100	4	4	100	4...6	GV3-ME10
3	100	100	4	8	100	5.5	4	100	6...10	GV3-ME14
4	100	100	5.5	8	100	7.5	4	100		
7.5	100	50	9	8	100	9	4	100	10...16	GV3-ME20
						11	4	100		
9	100	50	11	8	100	15	4	100	16...25	GV3-ME25
11	100	50	15	8	100	18.5	4	100		
15	35	50	18.5	8	75	22	4	75	25...40	GV3-ME40 ⁽²⁾
18.5	35	50	22	8	75	30	4	75		
22	35	50	30	8	75	37	4	75	40...63	GV3-ME63 ⁽²⁾
30	35	50	37	8	75	45	4	75		
37	15	50	45	4	100	55	2	100	56...80	GV3-ME80 ⁽²⁾

(1) as % of Icu
(2) combined with a recommended contactor





Add-on blocks						
Contact blocks						
Instantaneous auxiliary contacts (1 per breaker)						
Normal early break type contacts	N/C + N/O	N/O + N/O	N/C + N/O + N/O	N/O + N/O + N/O	N/O + N/O ⁽¹⁾	N/C + N/O ⁽¹⁾
	GV3-A01	GV3-A02	GV3-A03	GV3-A05	GV3-A06	GV3-A07
Fault signalling contact						
Normal early break type contacts	N/C			N/O		
	GV3-A08			GV3-A09		
Electric trips						
Voltage	50 Hz	110, 120, 127 V	220, 240 V	380, 415 V		
	60 Hz	120, 127 V	277 V	440, 480 V		
Undervoltage trip		GV3-B11	GV3-B22	GV3-B38		
Shunt trip		GV3-D11	GV3-D22	GV3-D38		
Padlocking device						
Start button (for bare device)	GV1-V02					
(1) + 2 volt free terminals						



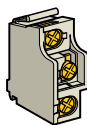
Thermal-magnetic circuit-breakers GV7-R for connection by screw clamp terminals

Control by rocker lever

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3									Setting range	Reference
400/415 V			500 V			660/690 V			of thermal	
P	Icu	Ics ⁽¹⁾	P	Icu	Ics ⁽¹⁾	P	Icu	Ics ⁽¹⁾	trips	
kW	kA		kW	kA		kW	kA		A	
7.5	25	100	9	18	100	11	8	100	12...20	GV7-RE20
9	25	100	11	18	100	15	8	100		
7.5	70	100	9	50	100	11	10	100	12...20	GV7-RS20
9	70	100	11	50	100	15	10	100		
9	25	100	11	18	100	15	8	100	15...25	GV7-RE25
11	25	100	15	18	100	18.5	8	100		
9	70	100	11	50	100	15	10	100	15...25	GV7-RS25
11	70	50	15	50	100	18.5	10	100		
18.5	25	100	18.5	18	100	22	8	100	25...40	GV7-RE40
			22	18	100					
18.5	70	100	18.5	50	100	22	10	100	25...40	GV7-RS40
22	25	100	30	18	100	30	8	100	30...50	GV7-RE50
37	25	100	45	18	100	55	8	100	48...80	GV7-RE80
			55	18	100					
37	70	100	45	50	100	55	10	100	48...80	GV7-RS80
			55	50	100					
45	25	100	-	18	100	75	8	100	60...100	GV7-RE100
45	70	100	-	50	100	75	10	100	60...100	GV7-RS100
55	35	100	75	30	100	90	8	100	90...150	GV7-RE150
75	70	100	90	30	100	110	8	100		
55	70	100	75	50	100	90	10	100	90...150	GV7-RS150
75	70	100	90	50	100	110	10	100		
90	35	100	110	30	100	160	8	100	132...220	GV7-RE220
110	35	100	132	30	100	200	8	100		
			160	30	100					
90	70	100	110	50	100	160	10	100	132...220	GV7-RS220

(1) as % of Icu





Add-on blocks						
Contact blocks						
Auxiliary contacts						
Contact type		C/O				
		GV7-AE11				
Thermal or magnetic fault discrimination						
		≈ 24...48 V or ≡ 24...72 V		≈ 110...240 V		
		GV7-AD111		GV7-AD112		
Electric trips						
Voltage	50/60 Hz	48 V	110... 130 V	200... 240 V	380...440 V	
	50 Hz					525 V
Undervoltage trip ⁽¹⁾		GV7-AU055	GV7-AU107	GV7-AU207	GV7-AU387	GV7-AU525
Shunt trip ⁽¹⁾		GV7-AS055	GV7-AS107	GV7-AS207	GV7-AS387	GV7-AS525

(1) For mounting of a GV7-AD or a GV7-AU or AS

Accessories				
Terminal shields IP 405				
Supplied with the sealing accessory		GV7-AC01		
Phase barriers				
Safety accessories		GV7-AC04		
used when fitting of shields is impossible				
Insulating screens				
Ensure insulation between		GV7-AC05		
the connections and the backplate				
Kit for combination with contactor				
Allowing link between the circuit-breaker and the contactor		LC1-F115 to F185	LC1-F225 and F26	LC1-D115 and D150
		GV7-AC06	GV7-AC07	GV7-AC08
Rotary handles				
Handle		black		red
Legend plate		black		yellow
■ direct	IP 40	GV7-AP03		GV7-AP04
■ extended	IP 55	GV7-AP01		GV7-AP02
Conversion accessory				
for mounting on enclosure door		IP 43	GV7-AP05	
Locking device				
For circuit-breaker not fitted with a rotary handle		GV7-V01		



Magnetic circuit-breakers GV2-LE and GV2-L for connection by screw clamp terminals

GV2-LE control by rocker lever, GV2-L control by rotary knob

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3

400/415 V			500 V			690 V			Magnetic protection	Tripping current	Use in association with thermal overload relay	Reference
P	Icu	Ics ⁽¹⁾	P	Icu	Ics ⁽¹⁾	P	Icu	Ics ⁽¹⁾	rating	d ± 20%		
kW	kA		kW	kA		kW	kA		A	A		
0.06	★	★	-	-	-	-	-	-	0.4	5	LR2-K0302	GV2-LE03
0.09	★	★	-	-	-	-	-	-	0.4	5	LR2-K0304 or LRD-03	GV2-LE03 GV2-L03
0.12	★	★	-	-	-	0.37	★	★	0.63	8	LR2-K0304 or LRD-04	GV2-LE04 GV2-L04
0.18	★	★	-	-	-	-	-	-	0.63	8	LR2-K0305 or LRD-04	GV2-LE04 GV2-L04
-	-	-	-	-	-	0.55	★	★	1	13	LR2-K0305 or LRD-05	GV2-LE05 GV2-L05
0.25	★	★	-	-	-	-	-	-	1	13	LR2-K0306 or LRD-05	GV2-LE05 GV2-L05
-	-	-	-	-	-	0.75	★	★	1	13	LR2-K0306 or LRD-06	GV2-LE05 GV2-L05
0.37	★	★	0.37	★	★	-	-	-	1	13	LR2-K0306 or LRD-05	GV2-LE05 GV2-L05
0.55	★	★	0.55	★	★	1.1	★	★	1.6	22.5	LR2-K0307 or LRD-06	GV2-LE06 GV2-L06
-	-	-	0.75	★	★	-	-	-	1.6	22.5	LR2-K0307 or LRD-06	GV2-LE06 GV2-L06
0.75	★	★	1.1	★	★	1.5	3	75	2.5	33.5	LR2-K0308	GV2-LE07
0.75	★	★	1.1	★	★	1.5	4	100	2.5	33.5	LRD-07	GV2-L07
1.1	★	★	-	-	-	-	-	-	2.5	33.5	LR2-K0308 or LRD-08	GV2-LE08 GV2-L08
1.5	★	★	1.5	★	★	3	3	75	4	51	LR2-K0310	GV2-LE08
1.5	★	★	1.5	★	★	3	4	100	4	51	LRD-08	GV2-L08
-	-	-	2.2	★	★	-	-	-	4	51	LR2-K0312 or LRD-08	GV2-LE08 GV2-L08
2.2	★	★	3	50	100	4	3	75	6.3	78	LR2-K0312	GV2-LE10
2.2	★	★	3	★	★	4	4	100	6.3	78	LRD-10	GV2-L10
3	★	★	4	10	100	5.5	3	75	10	138	LR2-K0314	GV2-LE14
3	★	★	4	10	100	5.5	4	100	10	138	LRD-12	GV2-L14
4	★	★	5.5	10	100	-	-	-	10	138	LR2-K0316 or LRD-14	GV2-LE14 GV2-L14
-	-	-	-	-	-	7.5	3	75	10	138	LRD-14	GV2-LE14
-	-	-	-	-	-	7.5	4	100	10	138	LRD-14	GV2-L14
-	-	-	-	-	-	9	3	75	14	170	LRD-16	GV2-LE16
-	-	-	-	-	-	9	4	100	14	170	LRD-16	GV2-L16
5.5	15	50	7.5	6	75	11	3	75	14	170	LR2-K0321	GV2-LE16
5.5	50	50	7.5	10	75	11	4	100	14	170	LRD-16	GV2-L16
7.5	15	50	9	6	75	15	3	75	18	223	LRD-21	GV2-LE20
7.5	50	50	9	10	75	15	4	100	18	223	LRD-21	GV2-L20
9	15	40	11	4	75	18.5	3	75	25	327	LRD-22	GV2-LE22
9	50	50	11	10	75	18.5	4	100	25	327	LRD-22	GV2-L22
11	15	40	15	4	75	-	-	-	25	327	LRD-22	GV2-LE22
11	50	50	15	10	75	-	-	-	25	327	LRD-22	GV2-L22
15	10	50	18.5	4	75	22	3	75	32	416	LRD-32	GV2-LE32
15	50	50	18.5	10	75	22	4	100	32	416	LRD-32	GV2-L32

★ > 100 kA

(1) as % of Icu

Accessories

Combination block

For mounting on	LC1-K or LP1-K	LC1-D09...D38	LAD-311 and LC1-D09...D38
	GV2-AF01	GV2-AF3	GV2-AF4

Sets of 3-pole busbars

63 A	Pitch	45 mm	54 mm	72 mm
Number of tap-offs	2	GV2-G245	GV2-G254	GV2-G272
	3	GV2-G345	GV2-G354	
	4	GV2-G445	GV2-G454	GV2-G472
	5		GV2-G554	

Protective end cover

For unused busbar outlets	GV1-G10
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Terminal blocks

For supply to one or more GV2-G busbar sets	connection from the top	can be fitted with current limiter GV1-L3 (GV2-ME and GV2-P)
		GV1-G09 GV1-G05

Padlockable external operator

Padlocking	In "On" and "Off" position	In "Off" position
Handle	black	red
Legend plate	blue	yellow
for GV2-L (50 to 290 mm) IP 54	GV2-AP01	GV2-AP02
for GV2-LE IP 54	GV2-AP03	

Padlocking device

Up to 6 padlocks (padlocks not supplied) Ø 6 mm shank max.	GV2-V03
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Add-on blocks

Contact blocks

Contact type	N/O or N/C	N/O + N/C	N/O + N/O	(fault) + N/C	N/C + N/O	C/O common point
Instantaneous auxiliary contacts						
Mounting front	GV-AE1	GV-AE11	GV-AE20			
LH side		GV-AN11	GV-AN20			
Fault signalling contact + instantaneous auxiliary contact						
LH side			GV-AD1010	GV-AD1001 GV-AD0101	GV-AD0110	
Short-circuit signalling contact						
LH side						GV-AM11

Electric trips

Undervoltage or shunt trips ⁽¹⁾		
Side mounting (1 block on RH side of circuit-breaker)	50 Hz	60 Hz
Voltage 24 V	GV-A•025	GV-A•026
48 V	GV-A•055	GV-A•056
100 V	GV-A•107	
100...110 V		GV-A•107
110...115 V	GV-A•115	GV-A•116
120...127 V	GV-A•125	
127 V		GV-A•115
200 V	GV-A•207	
200...220 V		GV-A•207
220...240 V	GV-A•225	GV-A•226
380...400 V	GV-A•385	GV-A•386
415...440 V	GV-A•415	
415 V		GV-A•416

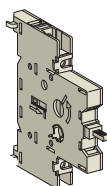
(1) Undervoltage trips: replace the • with U, shunt trips: replace the • with S



Magnetic circuit-breakers GK3-EF for connection by screw clamp terminals

Control by rotary knob

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3									Associated equipment		Circuit-breaker	
400/415 V			500 V			690 V			Contactor	Thermal	Short-circuit	
P	Icu	Ics	P	Icu	Ics	P	Icu	Ics	min. size	overload	protection	
kW	kA		kW	kA		kW	kA			relay	Rating A	Reference
15	50	30	18.5	20	30	-	-	-	LC1-D32	LRD-32	40	GK3-EF40
-	-	-	-	-	-	22	6	60	LC1-D40	LRD-3353	40	GK3-EF40
18.5	50	30	22	20	30	30	6	60	LC1-D40	LRD-3355	40	GK3-EF40
22	35	25	30	15	30	-	-	-	LC1-D50	LRD-3357	65	GK3-EF65
-	-	-	-	-	-	37	6	50	LC1-D65	LRD-3357	65	GK3-EF65
30	35	25	37	15	30	-	-	-	LC1-D65	LRD-3359	65	GK3-EF65
30	35	25	37	15	30	-	-	-	LC1-D65	LRD-3361	65	GK3-EF65
-	-	-	-	-	-	45	6	50	LC1-D80	LRD-3359	65	GK3-EF65
37	35	25	45	15	30	-	-	-	LC1-D80	LRD-3361	80	GK3-EF80
37	35	25	55	15	30	-	-	-	LC1-D80	LRD-3363	80	GK3-EF80



Add-on blocks

Contact blocks

Contact types	N/O	N/O + N/O	N/C + N/O	N/C	N/O
On-Off signalling contacts and "Control circuit test" function (1 or 2 blocks per device) mounted on RH side of GK3-EF	GK2-AX10	GK2-AX20	GK2-AX50		
Instantaneous fault signalling contacts (1 or 2 blocks per device) mounted on LH side of GK3-EF	GK2-AX12	GK2-AX22	GK2-AX52		
Fault signalling contact ⁽¹⁾				GV3-A08	GV3-A09

(1) 1 trip OR 1 fault signalling contact to be fitted inside the circuit-breaker.

Accessories

Padlocking device

for padlocking the operator, with up to 3 padlocks (padlocks not supplied) **GK3-AV01**

External operator

for mounting on enclosure door. **GK3-AP03**
Red Ø 40 pushbutton on yellow plate, can be locked in position O by means of up to 3 padlocks with door locked in position I, and door locked in position O when padlocked



Fuse carrier						
Rated operational voltage with links, a.c. supply		480 V	480 V	690 V	690 V	690 V
Maximum continuous current for ambient temperature ≤ 40° C ⁽¹⁾						
with links		20	20	32	32	50
with aM cartridge fuses		10	10	25	25	50
with gG cartridge fuses		20	20	30	30	40
Conforming to standards	NF C 61-201	●	-	●	-	-
	IEC 947-3	●	●	●	●	●
Fuse carrier type		DF6-AB08	GK1-C	DF6-AB10	GK1-D	GK1-E

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Fuse carrier							
Composition		1 P	1 N	3 P + N	2 P	3 P	3 P + N
Size of cartridge fuse							
or link							
8.5 x 31.5	20 A	DF6-AB08	DF6-N10	GK1-CC	GK1-CD	GK1-CF	GK1-CH
10 x 38	32 A	DF6-AB10	DF6-N10	GK1-DC	GK1-DD	GK1-DF	GK1-DH
14 x 51	50 A	GK1-EB	GK1-EN	GK1-EC	GK1-ED	GK1-EF	GK1-EH
22 x 58	125 A	GK1-FB	GK1-FN	GK1-FC	GK1-FD	GK1-FF	GK1-FH

Fuse carrier assembly strips			
Number of fuse carriers to be assembled		2	3
Type	DF6	GK1-AP2	GK1-AP3
	GK1-E	GK1-AP3	GK1-AP5
	GK1-F	GK1-AP4	GK1-AP6

Blown fuse indicators (neon)		
For use on fuse carriers	DF6, GK1-C, D and E	
Operational voltage	80...400 V	GK1-AS



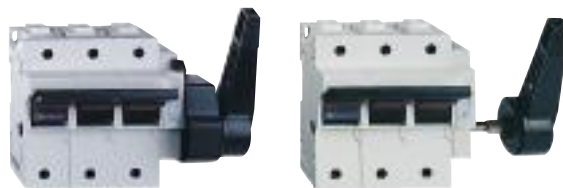
Fuse carriers					
Rated operational voltage with links, a.c. supply		690 V	690 V	690 V	690 V
Maximum continuous current for ambient temperature ≤ 40° C					
with links	min cable Ø/le (mm²/A)	6/32 or 4/25 or 2.5/16	4/25 or 2.5/16	10/50 or 6/40	32/125 or 25/100
with aM fuses (mm²/A)		6/32 or 4/22 or 2.5/20	4/22 or 2.5/20	10/50 or 6/35	32/125 or 25/100
with gG fuses (mm²/A)		6/32 or 2.5/20 or 1.5/16	2.5/20 or 1.5/16	10/40 or 6/32	25/100 or 16/80
Conforming to standards	NF EN 60947-3	●		●	●
	IEC 947-3	●		●	●
Product certifications		BV, UR		-	-
Fuse carrier type		LS1-D32	LS1-D323	GK1-E•	GK1-F•

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Basic blocks						
Connection						
Rating	25 A	32 A	50 A		125 A	
Cartridge fuse size	10 x 38	10 x 38	14 x 51		22 x 58	
 by spring terminals						
Number of early break contacts -						
Single-phase protection device	Without	Without	Without	With	Without	With
3-pole	LS1-D323					
 by screw clamp terminals or connectors						
Number of early break contacts	-	-	1		1	
3-pole		LS1-D32	GK1-EK	GK1-EV	GK1-FK	GK1-FV
4-pole		LS1-D32 + LA8-D324	GK1-EM	GK1-EY	GK1-FM	GK1-FY
Number of early break contacts			2		2	
3-pole			GK1-ES	GK1-EW	GK1-FS	GK1-FW
4-pole			GK1-ET	GK1-EX	GK1-FT	GK1-FX





Operators					
Handles	■ side			■ front	
Number of poles, 3 or 4					
For fuse carrier rating	125 A			32, 50, 125 A	
For mounting on	RH side	LH side			
	GK1-AP07	GK1-AP08		Fitted as standard	
	■ external				
For fuse carrier rating	32 A	50 A		125 A	
For mounting on	RH or LH side	RH side	LH side	RH side	LH side
	DK1-FB005	GK1-AP05	GK1-AP06	GK1-AP07	GK1-AP08

Padlocking devices					
For fuse carrier rating	32 A	50 A			
Number of poles	3 or 4	3		4	
Single-phase protection device	Without	Without	With	Without	With
	Integral	GK1-AV07	GK1-AV08	GK1-AV08	GK1-AV09

Links			
Tubular links			
Number of poles, 3 or 4			
For fuse carrier rating	32 A	50 A	125 A
Reference	DK1-CB92 ⁽¹⁾	DK1-EB92 ⁽²⁾	DK1-FA92 ⁽²⁾

(1) For use on a neutral circuit, the tubular link can be interlocked with special device LA8-D25906.

(2) 4-pole fuse carriers GK1-50 and 125 A 4 are fitted with an interlocked neutral tubular link as standard.

Add-on blocks				
Contact blocks				
For use on	LS1-D32		LS1-D323	
Contact type	N/O + N/C	N/O + N/O	N/O + N/C	N/O + N/O
Instantaneous auxiliary contacts				
Mounting	front			
	GV-AE11	GV-AE20	GV-AE113	GV-AE203



Switch-disconnector-fuse switch bodies

■ for use with NF C or DIN fuses

Number of poles		3	3 + N ⁽¹⁾	3	4	3	4	3	4	3
Switch rating		32 A		50 A		63 A		100 A		125 A
Fuse size		10 x 38		14 x 51		00C ⁽²⁾		22 x 58		22 x 58
Type of operator:										
■ internal or external	RH or LH side and front	GS1-DD3	GS1-DD4							
	RH side			GS1-FD3	GS1-FD4	GS1-GD3	GS1-GD4	GS1-JD3	GS1-JD4	GS1-KD3
■ external	LH side			GS1-FG3	GS1-FG4	GS1-GG3	GS1-GG4	GS1-JG3	GS1-JG4	GS1-KG3
	front			GS1-F3	GS1-F4	GS1-G3	GS1-G4	GS1-J3	GS1-J4	GS1-K3
■ internal and external	front									

■ for use with BS fuses

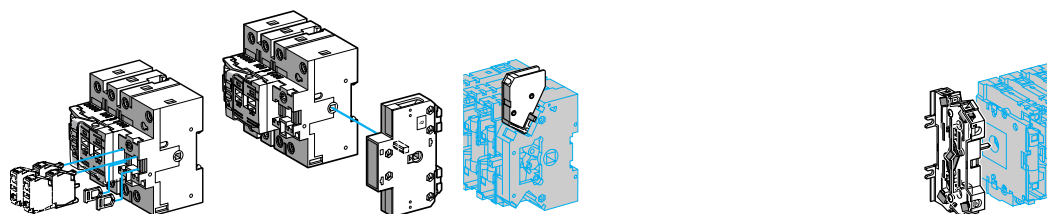
Switch rating	32 A		63 A		100 A		160 A		
Fuse size	A1		A2-A3		A4 Ø ≤ 31 mm		A4		B1-B2
Type of operator:									
■ internal or external	RH or LH side and front	GS1-DBB3	GS1-DBB4						
■ RH side				GS1-GBR3	GS1-GBR4	GS1-JBR3	GS1-JBR4	GS1-LLBR3	GS1-LLBR4
■ external	front							GS1-LBR3	
■ internal and external	front	GS1-DB3	GS1-DB4	GS1-GB3	GS1-GB4	GS1-JB3	GS1-JB4	GS1-LLB3	GS1-LLB4
								GS1-LB3	

(1) N = Switched Neutral

(2) Fuses for German market

Auxiliary “blown fuse” signalling contacts for use with NF C or DIN fuses

Contact type	1 st C/O					
Switch rating	50 A		100 and 125 A		160 A	
Fuse size	14 x 51		22 x 58		T0	
Number of poles	3	4	3	4	3	4
	GS1-AF13	GS1-AF14	GS1-AF23	GS1-AF24	GS1-AF33	GS1-AF34



Auxiliary early break and/or signalling contacts

Switch rating	32 A				50...400 A		630...1250 A		50...400 V	
Contact type	1 N/O	1 N/C	1 C/O	2 C/O	1 C/O	2 C/O	1 C/O	2 C/O	1 N/C + 1 N/O	2 N/C + 2 N/O
Standard contacts	GS1-AM110	GS1-AM101	GS1-AM111	GS1-AM211	GS1-AM1	GS1-AM2	GS1-AM3	GS1-AM4	GS1-AN11	GS1-AN22
Contacts with test facility									GS1-ANT11	GS1-ANT22



4	3	4	3	4	3	4	3	4	3	4	3	4	3	4
160 A			250 A			400 A			630 A			1250 A		
Size 00			Size 0			Size 00			Size 1			Size 2		
GS1-KD4	GS1-KKD3	GS1-KKD4	GS1-LD3	GS1-LD4	GS1-LLD3	GS1-LLD4	GS1-ND3	GS1-ND4	GS1-QQD3	GS1-QQD4	GS1-SD3	GS1-SD4	GS1-VD3	GS1-VD4
GS1-KG4	GS1-KKG3	GS1-KKG4	GS1-LG3	GS1-LG4	GS1-LLG3	GS1-LLG4	GS1-NG3	GS1-NG4	GS1-QQG3	GS1-QQG4				
GS1-K4	GS1-KK3	GS1-KK4	GS1-L3	GS1-L4	GS1-LL3	GS1-LL4	GS1-N3	GS1-N4	GS1-QQ3	GS1-QQ4				
											GS1-S3	GS1-S4	GS1-V3	GS1-V4
200 A			250 A			315 A			400 V			630 A		
B1-B2			B1...B3			B1...B3			B1...B4			C1-C2		
GS1-LBR4	GS1-MMBR3	GS1-MMBR4	GS1-NBR3	GS1-NBR4	GS1-PPBR3	GS1-PPBR4	GS1-QQBR3	GS1-QQBR4	GS1-SBR3	GS1-SBR4	GS1-TBR3	GS1-TRB4	GS1-VRB3	GS1-VRB4
GS1-LB4	GS1-MMB3	GS1-MMB4	GS1-NB3	GS1-NB4	GS1-PPB3	GS1-PPB4	GS1-QQB3	GS1-QQB4						
									GS1-SB3	GS1-SB4	GS1-TB3	GS1-TB4	GS1-VB3	GS1-VB4

5

250 and 400 A						2 nd C/O			
T1 and T2			T3			T4			
3	4		3	4		3	4		
GS1-AF43	GS1-AF44		GS1-AF63	GS1-AF64		GS1-AF73	GS1-AF74		



Thermal overload relays, model d

adjustable from 0.1 to 140 A

Compensated relays with manual or automatic reset, with relay trip indicator, for a.c. or d.c.

Relay setting range		Fuses to be used with selected relay			With contactor	Reference
		aM	gG	BS88		
Class 10 A	0.10...0.16 A	0.25 A	2 A	-	LC1-D09...D38	LRD-01
	0.16...0.25 A	0.5 A	2 A	-	LC1-D09...D38	LRD-02
	0.25...0.40 A	1 A	2 A	-	LC1-D09...D38	LRD-03
	0.40...0.63 A	1 A	1.6 A	-	LC1-D09...D38	LRD-04
	0.63...1 A	2 A	4 A	-	LC1-D09...D38	LRD-05
	1...1.7 A	2 A	4 A	6 A	LC1-D09...D38	LRD-06
	1.6...2.5 A	4 A	6 A	10 A	LC1-D09...D38	LRD-07
	2.5...4 A	6 A	10 A	16 A	LC1-D09...D38	LRD-08
	4...6 A	8 A	16 A	16 A	LC1-D09...D38	LRD-10
	5.5...8 A	12 A	20 A	20 A	LC1-D09...D38	LRD-12
	7...10 A	12 A	20 A	20 A	LC1-D09...D38	LRD-14
	9...13 A	16 A	25 A	25 A	LC1-D12...D38	LRD-16
	12...18 A	20 A	35 A	32 A	LC1-D18...D38	LRD-21
	16...24 A	25 A	50 A	50 A	LC1-D25...D38	LRD-22
	23...32 A	40 A	63 A	63 A	LC1-D25...D38	LRD-32
	30...38 A	50 A	80 A	80 A	LC1-D32 and D38	LRD-35
	17...25 A	25 A	50 A	50 A	LC1-D40...D95	LRD-3322
	23...32 A	40 A	63 A	63 A	LC1-D40...D95	LRD-3353
	30...40 A	40 A	100 A	80 A	LC1-D40...D95	LRD-3355
	37...50 A	63 A	100 A	100 A	LC1-D40...D95	LRD-3357
	48...65 A	63 A	100 A	100 A	LC1-D50...D95	LRD-3359
	55...70 A	80 A	125 A	125 A	LC1-D50...D95	LRD-3361
	63...80 A	80 A	125 A	125 A	LC1-D65 and D95	LRD-3363
	80...104 A	100 A	160 A	160 A	LC1-D80 and D95	LRD-3365
	80...104 A	125 A	200 A	160 A	LC1-D115 and D150	LRD-4365
	95...120 A	125 A	200 A	200 A	LC1-D115 and D150	LRD-4367
	110...140 A	160 A	250 A	200 A	LC1-D150	LRD-4369
	80...104 A	100 A	160 A	160 A	(1)	LRD-33656
	95...120 A	125 A	200 A	200 A	(1)	LRD-33676
	110...140 A	160 A	250 A	200 A	(1)	LRD-33696
Class 20 A	6 A	10 A	16 A		LC1-D09...D32	LRD-1508
	4...6 A	8 A	16 A	16 A	LC1-D09...D32	LRD-1510
	5.5...8 A	12 A	20 A	20 A	LC1-D09...D32	LRD-1512
	7...10 A	16 A	20 A	25 A	LC1-D09...D32	LRD-1514
	9...13 A	16 A	25 A	25 A	LC1-D12...D32	LRD-1516
	12...18 A	25 A	35 A	40 A	LC1-D18...D32	LRD-1521
	17...25 A	32 A	50 A	50 A	LC1-D25 and D32	LRD-1522
	23...28 A	40 A	63 A	63 A	LC1-D25 and D32	LRD-1530
	25...32 A	40 A	63 A	63 A	LC1-D25 and D32	LRD-1532
	17...25 A	32 A	50 A	50 A	LC1-D40...D95	LR2-D3522
	23...32 A	40 A	63 A	63 A	LC1-D40...D95	LR2-D3553
	30...40 A	50 A	100 A	80 A	LC1-D40...D95	LR2-D3555
	37...50 A	63 A	100 A	100 A	LC1-D50...D95	LR2-D3557
	48...65 A	80 A	125 A	100 A	LC1-D50...D95	LR2-D3559
	55...70 A	100 A	125 A	125 A	LC1-D65...D95	LR2-D3561
	63...80 A	100 A	160 A	125 A	LC1-D80 and D95	LR2-D3563

(1) Independent mounting

Screw clamp terminal connections or connectors. For spring terminal connections on LRD-01 to LRD-22, add 3 to the end of the reference. Example: LRD-01 becomes LRD-013.

For lug-clamp connections, add 6 to the end of the reference. Example: LRD-01 becomes LRD-016.

For thermal overload relays for use with class 10 A unbalanced loads, with connection by screw clamp terminals, change the prefix in the references above from LRD (except LRD-4***) to LR3-D. Example LRD-01 becomes LR3-D01.



Thermal overload relays, model k adjustable from 0.11 to 12 A				
Connection by screw clamp terminals, direct mounting on contactors LC1-K, manual or automatic reset				
Relay setting range	Fuses to be used with selected relay			Reference
Class 10 A	aM	gG	BS88	
0.11...0.16 A	0.25 A	0.5 A	-	LR2-K0301
0.16...0.23 A	0.25 A	0.5 A	-	LR2-K0302
0.23...0.36 A	0.5 A	1 A	-	LR2-K0303
0.36...0.54 A	1 A	1.6 A	-	LR2-K0304
0.54...0.8 A	1 A	2 A	-	LR2-K0305
0.8...1.2 A	2 A	4 A	6 A	LR2-K0306
1.2...1.8 A	2 A	6 A	6 A	LR2-K0307
1.8...2.6 A	2 A	6 A	10 A	LR2-K0308
2.6...3.7 A	4 A	10 A	16 A	LR2-K0310
3.7...5.5 A	6 A	16 A	16 A	LR2-K0312
5.5...8 A	8 A	20 A	20 A	LR2-K0314
8...11.5 A	10 A	25 A	20 A	LR2-K0316

Thermal overload relays for use on class 10 A unbalanced loads: for above references LR2-K0305 to LR2-K0316 only, replace the prefix LR2 with LR7.
Example LR7-K0310.

Accessories		
Prewiring kit		
Allowing direct connection of the N/C contact of relay LRD-01...35 or LR3-D01... D35 to the contactor	For use on LC1-D09...D18	LAD-7C1
	LC1-D25...D38	LAD-7C2
Terminal blocks (1)		
For clip-on mounting on 35 mm mounting rail (AM1-DP200) or screw fixing	LRD-01...35 and LR3-D01...D35	LAD-7B10
	LRD-3***, LR3-D3***, LRD-35**	LA7-D3064 ⁽²⁾
For independent mounting of the relay	LR2-K****	LA7-K0064
Terminal block adapter		
For mounting a relay beneath an LC1-D115 or D150 contactor	LRD-3***, LR3-D3***, LRD-35**	LA7-D3058
Stop or electrical reset		
Remote ⁽³⁾	LRD-01...35 and LR3-D01...D35	LAD-703• ⁽⁴⁾
Tripping or electrical reset device		
Remote ⁽³⁾	All relays except LRD-01...35 and LR3-D01...D35	LA7-D03• ⁽⁴⁾

- (1) Terminal blocks are supplied with terminals protected against direct finger contact and screws in the open "ready-to-tighten" position.
- (2) To order a terminal block for connection by lug-clamps, the reference becomes LA7-D30646.
- (3) The time for which the coil of remote tripping or electrical resetting device LA7-D03 or LAD-703 can remain energised depends on its rest time: 1 s pulse duration with 9 s rest time; maximum pulse duration of 20 s with a rest time of 300 s. Minimum pulse time 200 ms.
- (4) Reference to be completed by adding the code indicating the control circuit voltage.

Standard control circuit voltages								
~ supply								
Volts	12	24	48	96	110	220/230	380/400	415/440
50/60 Hz. Consumption, inrush and sealed < 100 VA	-	B	E	-	F	M	Q	N
= supply								
Consumption, inrush and sealed < 100 W	J	B	E	DD	F	M	-	-



For use with contactor	LC1-D	LC1-F
Motor current	60...150 A	30...630 A
Basic reference, to be completed	LR9-D	LR9-F

5

Relay setting range	Fuse to be used with selected relay		For mounting	Compensated and differential		
	aM	gG	beneath contactor LC1-	Class 10	Class 20	or not with alarm
60...100	100	160	D115 and D150	LR9-D5367	LR9-D5567	
90...150	160	250	D115 and D150	LR9-D5369	LR9-F5569	
30...50	50	80	F115...F185	LR9-F5357	LR9-F5557	LR9-F57
48...80	80	125	F115...F185	LR9-F5363	LR9-F5563	LR9-F63
60...100	100	200	F115...F185	LR9-F5367	LR9-F5567	LR9-F67
90...150	160	250	F115...F185	LR9-F5369	LR9-F5569	LR9-F69
132...220	250	315	F185...F400	LR9-F5371	LR9-F5571	LR9-F71
200...330	400	500	F225...F500	LR9-F7375	LR9-F7575	LR9-F75
300...500	500	800	F225...F500	LR9-F7379	LR9-F7579	LR9-F79
380...630	630	800	F400...F630 and F800	LR9-F7381	LR9-F7581	LR9-F81

Accessories

Remote control

Function	Reset	Stop and/or Reset
Electrical reset ⁽¹⁾	LA7-D03 ⁽²⁾	
Reset by flexible cable (length 0.5 m)	LA7-D305	
Adapter for door interlock mechanism		LA7-D1020

Operating head for pushbutton

Spring return	ZA2-BL639	ZA2-BL432
---------------	------------------	------------------

Rod with snap-off end

Adjustable from 17 to 120 mm	ZA2-BZ13	
------------------------------	-----------------	--

Insulated terminal blocks

For relays LR9-F5•57, F5•63, F5•67, F5•69, F57, F63, F67 and F69	Set of 2 blocks
	LA9-F103

(1) The time for which the coil of remote electrical reset device LA7-D03 can remain energised depends on its rest time: 1 s pulse with 9 s rest time; 5 s pulse duration with 30 s rest time; 10 s pulse duration with 90 s rest time: maximum pulse duration 20 s with rest time of 300 s. Minimum pulse time: 200 ms.

(2) Reference to be completed by adding the coil voltage code, see page 5/27



Relay type		Electronic over current relays model LR97D			
Relay setting range		0,3...1,5 A	1,2...7 A	5...25 A	20...38 A
For use with contactor		LC1D09...D38		LC1D25...D38	
References	200... 240 VAC	LR97D015M7	LR97D07M7	LR97D025M7	LR97D038M7
	100... 120 VAC	LR97D015F7	LR97D07F7	LR97D025F7	LR97D038F7
	24 VAC/DC	LR97D015B	LR97D07B	LR97D025B	LR97D038B
	48 VAC/DC	LR97D015E	LR97D07E	LR97D025E	LR97D038E

0,5...60 A



5

Relay type		Electronic over current relays model LT47 with manual reset		
Relay setting range		0,5...6 A	3...30 A	5...60 A
References	200... 240 VAC	LT4706M7S	LT47D30M7S	LT4760M7S
	100... 120 VAC	LT47D06F7S	LT47D30F7S	LT4760F7S
	24 VAC/DC	LT47D06BS	LT47D30BS	LT4760BS
	48 VAC/DC	LT47D06ES	LT47D30ES	LT4760ES

Relay type		Electronic over current relays model LT47 with automatic reset		
Relay setting range		0,5...6 A	3...30 A	5...60 A
References	200... 240 VAC	LT4706M7A	LT47D30M7A	LT4760M7A
	100... 120 VAC	LT47D06F7A	LT47D30F7A	LT4760F7A
	24 VAC/DC	LT47D06BA	LT47D30BA	LT4760BA
	48 VAC/DC	LT47D06EA	LT47D30EA	LT4760EA

Accessories : please consult your Schneider Electric agency.



For use with contactor	LC1-D or LC1-F	LC1-D or LC1-F
Motor current	No limit	1...5 A
Basic reference, to be completed	LT3-S	LT6-P0M0-5FM

3-pole multifunction protection relays

Operational current	A	0.2...1. 1...5	5...25
		LT6-P0M005FM	LT6-P0M025FM

Protection units with automatic reset with thermistor short-circuit detection

■ without fault memory

Connection	Voltage	Output contact	Reference
by cage connectors	~ 50/60 Hz	N/C	LT3-SE00F
	230 V	N/C	LT3-SE00M
	24 V	N/C	LT3-SE00F
On front panel: fault and voltage signalling indicator			
	~ 50/60 Hz	N/C + N/O	LT3-SA00M
	24/48 V	N/C + N/O	LT3-SA00ED
	~ 50/60 Hz or 24 V	2 C/O	LT3-SA00MW

■ with fault memory

On front panel: fault and voltage signalling indicator, Test and Reset button

	~ 50/60 Hz	400 V	N/C + N/O	LT3-SM00V
		24/48 V	N/C + N/O	LT3-SM00E
		115/230 V	N/C + N/O	LT3-SM00M
	24 V	24/48 V	N/C + N/O	LT3-SM00ED
	~ 50/60 Hz or 24 V	24...230 V	2 C/O	LT3-SM00MW

Accessories

PTC thermistor probes for LT3 and LT6 relays

Normal operating temperature (NOT)	90 °C	110 °C	120 °C	130 °C	140 °C	150 °C	160 °C	170 °C
Integrated triple probes	DA1-TT090	DA1-TT110	DA1-TT120	DA1-TT130	DA1-TT140	DA1-TT150	DA1-TT160	DA1-TT170
Normal operating temperature (NOT)		60 °C	70 °C	80 °C	90 °C	100 °C		
Surface probes	DA1-TS060	DA1-TS070	DA1-TS080	DA1-TS090	DA1-TS100			

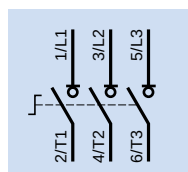
Configuration software for LT6 relays

Languages: English, French, German, Italian, Spanish	Kit ⁽¹⁾	Diskette
For use with all relay sizes	LA9-P620	LA9-P621

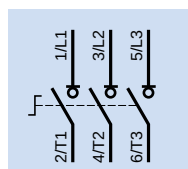
Current transformers for LT6 relays

Operational current	primary	100 A	400 A	800 A
	secondary	1 A	1 A	1 A
		LT6-CT1001	LT6-CT4001	LT6-CT8001

(1) Comprising 2 x 3" 1/2 diskettes, 1 x 2 m connection cable with 2 SUB-D 9-pin connectors (female-female)



Type	Mini-Vario for standard applications		
	Mounting door		Backplate mounting in enclosure
Colour handle / Front plate	Red / Yellow	Black / Black	Red / Yellow
Front plate dimensions (mm)	60 x 60		60 x 60
Fixing	Ø 22.5 mm		Ø 22.5 mm
Degree of protection	IP 20		IP 20
Rated operational voltage (Ue)	690 V		690 V
Thermal current in open air (Ith)	12 A	VCDN12	VBDN12
	20 A	VCDN20	VBDN20



Type	Vario for high performance applications						Backplate mounting in enclosure		
	Mounting door								
Colour handle / Front plate	Red / Yellow	Black / Black	Red / Yellow	Black / Black	Red / Yellow				
Front plate dimensions (mm)	60 x 60		60 x 60		90 x 90		60 x 60		90 x 90
Fixing	Ø 22,5 mm		4 screws		4 screws		Ø 22,5 mm	4 screws	4 screws
Degree of protection	IP 20		IP 20		IP 20		IP 20	IP 20	IP 20
Rated operational voltage (Ue)	690 V		690 V		690 V		690 V	690 V	690 V
Thermal current in open air (Ith)	12 A	VCD02	VBD02	VCF02	VBF02	–	VCCD02	VCCF02	–
	20 A	VCD01	VBD01	VCF01	VBF01	–	VCCD01	VCCF01	–
	25 A	VCD0	VBD0	VCF0	VBF0	–	VCCD0	VCCF0	–
	32 A	VCD1	VBD1	VCF1	VBF1	–	VCCD1	VCCF1	–
	40 A	VCD2	VBD2	VCF2	VBF2	–	VCCD2	VCCF2	–
	63 A	–	–	VCF3	VBF3	–	–	VCCF3	–
	80 A	–	–	VCF4	VBF4	–	–	VCCF4	–
	125 A	–	–	–	–	VCF5	–	–	VCCF5
	175 A	–	–	–	–	VCF6	–	–	VCCF6



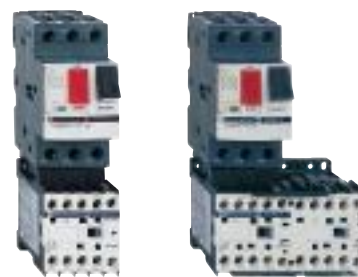
Add-on modules		For mini-Vario		For Vario						
Main pole modules										
Rating		12 A	20 A	12 A	20 A	25 A	32 A	40 A	63 A	80 A
References		VZN12	VZN20	VZ02	VZ01	VZ0	VZ1	VZ2	VZ3	VZ4
Neutral pole module with early make and late break contacts										
Rating		12...20 A		12...40 A		63 and 80 A		125 and 175 A		
References		VZN11		VZ11		VZ12		VZ13		
Earthing module										
References		VZN14		VZ14		VZ15		VZ16		
Auxiliary contact block modules										
Contact types		N/O	N/C	N/O + N/C			N/O + N/O			
References		VZN05	VZN06	VZ7			VZ20			



D.O.L. starters

		with circuit-breaker		with fuse protection
Level of service	Coordination:	Type 1		Type 2
Power at 400 V	Up to:	5.5 kW	15 kW	37 kW
Type of components		Combination automatic motor starter with overload protection incorporated in the circuit-breaker		Fuse carrier + plate-mounted contactor
Basic reference, to be completed		GV2-ME	GV2-DM	GV2-DP
				LC4-D

5



Starters GV2-ME

					Non-reversing		Reversing
Standard power ratings of 3-phase motors			Setting range of thermal trips	Fixed magnetic tripping current	For customer assembly		Factory assembled
50/60 Hz in category AC-3 (kW)					Motor circuit-breaker	Contactors	Basic reference, to be completed with code indicating control circuit voltage
400/415 V	440 V	500 V		13 I _{rt}			
0.37	0.37	0.37	1...1.6	22.5	GV2-ME06	LC1-K06	GV2-ME06K1**
0.55	0.55	0.55					GV2-ME06K2**
-	-	0.75					
0.75	0.75	-	1.6...2.5	33.5	GV2-ME07	LC1-K06	GV2-ME07K1**
-	1.1	1.1					GV2-ME07K2**
1.1	-	1.5	2.5...4	51	GV2-ME08	LC1-K06	GV2-ME08K1**
1.5	1.5	2.2					GV2-ME08K2**
2.2	2.2	-	4...6.3	78	GV2-ME10	LC1-K06	GV2-ME10K1**
-	-	3					GV2-ME10K2**
3	-	4	6...10	138	GV2-ME14	LC1-K09	GV2-ME14K1**
4	4	5.5					GV2-ME14K2**
5.5	5.5	7.5	9...14	170	GV2-ME16	LC1-K12	GV2-ME16K1**
							GV2-ME16K2**

Standard control circuit voltages (for other voltages, please consult your Regional Sales Office)

Volts	24	110	220/230	230	230/240	380/400
~ 50...400 Hz	B7	F7	M7	P7	U7	Q7
— (1)	BW3	-	-	-	-	-

(1) Low consumption coil (1.5 W), wide range (0.7...1.3 Uc) and with integral suppression device as standard.



D.O.L. starters GV2-DM and GV2-DP

							Non-reversing	Reversing
Standard power ratings			Setting	Fixed	For customer assembly		Factory assembled	
of 3-phase motors			range of	magnetic	Motor	Contactor	Basic reference, to be completed with	
50/60 Hz in category AC-3 (kW)			thermal trips	tripping current	circuit-breaker		code indicating control circuit voltage	
400/415 V	440 V	500 V		13 Irth				
0.06	0.06	-	0.16...0.25	2.4	GV2-ME02	LC1-D09**	GV2-DM102**	GV2-DM202**
					GV2-P02	LC1-D09**	GV2-DP102**	GV2-DP202**
0.09	0.09	-	0.25...0.40	5	GV2-ME03	LC1-D09**	GV2-DM103**	GV2-DM203**
-	0.12	-			GV2-P03	LC1-D09**	GV2-DP103**	GV2-DP203**
0.12	-	-	0.40...0.63	8	GV2-ME04	LC1-D09**	GV2-DM104**	GV2-DM204**
0.18	0.18	-			GV2-P04	LC1-D09**	GV2-DP104**	GV2-DP204**
0.25	0.25	-	0.63...1	13	GV2-ME05	LC1-D09**	GV2-DM105**	GV2-DM205**
0.37	0.37	-			GV2-P05	LC1-D09**	GV2-DP105**	GV2-DP205**
-	-	0.37	1...1.6	22.5	GV2-ME06	LC1-D09**	GV2-DM106**	GV2-DM206**
0.55	0.55	0.55			GV2-P06	LC1-D09**	GV2-DP106**	GV2-DP206**
-	-	0.75						
0.75	0.75	-	1.6...2.5	33.5	GV2-ME07	LC1-D09**	GV2-DM107**	GV2-DM207**
-	1.1	1.1			GV2-P07	LC1-D09**	GV2-DP107**	GV2-DP207**
1.1	-	1.5	2.5...4	51	GV2-ME08	LC1-D09**	GV2-DM108**	GV2-DM208**
1.5	1.5	2.2			GV2-P08	LC1-D09**	GV2-DP108**	GV2-DP208**
2.2	2.2	-	4...6.3	78	GV2-ME10	LC1-D09**	GV2-DM110**	GV2-DM210**
-	3	3			GV2-P10	LC1-D09**	GV2-DP110**	GV2-DP210**
3	-	4	6...10	138	GV2-ME14	LC1-D09**	GV2-DM114**	GV2-DM214**
4	4	5.5			GV2-P14	LC1-D09**	GV2-DP114**	GV2-DP214**
5.5	5.5	7.5	9...14	170	GV2-ME16	LC1-D12**	GV2-DM116**	GV2-DM216**
-	7.5	9			GV2-P16	LC1-D25**	GV2-DP116**	GV2-DP216**
7.5	9	-	13...18	223	GV2-ME20	LC1-D18**	GV2-DM120**	GV2-DM220**
					GV2-P20	LC1-D25**	GV2-DP120**	GV2-DP220**
9	11	11	17...23	327	GV2-ME21	LC1-D25**	GV2-DM121**	GV2-DM221**
					GV2-P21	LC1-D25**	GV2-DP121**	GV2-DP221**
11	-	15	20...25	327	GV2-ME22	LC1-D25**	GV2-DM122**	GV2-DM222**
					GV2-P22	LC1-D25**	GV2-DP122**	GV2-DP222**
15	15	18.5	24...32	416	GV2-ME32	LC1-D32**	GV2-DM132**	GV2-DM232**
					GV2-P32	LC1-D32**	GV2-DP132**	GV2-DP232**

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Standard control circuit voltages (for other voltages, please consult your Regional Sales Office)

Volts	24	220	230
~ 50...400 Hz	B7	M7	P7
== (1)	BD	-	-

(1) Low consumption coil (1.5 W), wide range (0.7...1.3 Uc) with integral suppression device as standard.



Power base for D.O.L. starter						
■ Non reversing				■ Reversing		
Connection by screw clamp terminals						
Rated operational voltage	≤ 440 V	≤ 500 V	≤ 690 V	≤ 440 V	≤ 500 V	≤ 690 V
Power	12 A	12 A	9 A	12 A	12 A	9 A
	LUB-12			LU2B-12**		
Power	32 A	23 A	21 A	32 A	23 A	21 A
	LUB-32			LU2B-32**		

5



Add-on blocks						
Contact blocks						
Signalling		Contact				
■ status of starter-controller power poles		N/O (53-54)				
■ fault			N/C (95-96)		N/C (95-96)	
■ control handle in position O				N/O (17-18)		N/O (17-18)
Connection	Item	1	1	1	1	1
■ screw clamp terminals	1 + 2	LUA1-D11		LUA1-C11		LUA1-C20
■ without connections	1	LUA1-D110		LUA1-C110		LUA1-C200
Auxiliary contact blocks						
		N/O	N/C	N/O	N/C	N/O
		2	-	1	1	-
■ screw clamp terminals	3	LUF-N20		LUF-N11		LUF-N02



Modules		
■ parallel wiring	LUF-C00	
■ alarm	LUF-W10	
■ communication	AS-i	Modbus
	ASILUF-C5	LUL-C033
■ indication of motor load		4...20 mA
		LUF-V2
■ fault differentiation and reset	manual reset	automatic reset
	LUF-DH11	LUF-DA10





Control units

■ standard

Standard power ratings of 3-phase motors 50/60 Hz in AC-3			Setting range	Clip-in mounting
400/415 V	500 V	690 V		on power base
0.09	-	-	0.15...0.6	12 and 32
0.25	-	-	0.35...1.4	12 and 32
1.5	2.2	3	1.25...5	12 and 32
5.5	5.5	9	3...12	12 and 32
7.5	9	15	4.5...18	32
15	15	18.5	8...32	32

Class 10

LUCA-X6**
LUCA-1X**
LUCA-05**
LUCA-12**
LUCA-18**
LUCA-32**

■ advanced

For motor type				
0.09	-	-	0.15...0.6	12 and 32
0.25	-	-	0.35...1.4	12 and 32
1.5	2.2	3	1.25...5	12 and 32
5.5	5.5	9	3...12	12 and 32
7.5	9	15	4.5...18	32
15	15	18.5	8...32	32

Class 10

■ 3-phase
LUCB-X6**
LUCB-1X**
LUCB-05**
LUCB-12**
LUCB-18**
LUCB-32**

■ single-phase

LUCC-X6**
LUCC-1X**
LUCC-05**
LUCC-12**
LUCC-18**
LUCC-32**

Class 20

3-phase
LUCD-X6**
LUCD-1X**
LUCD-05**
LUCD-12**
LUCD-18**
LUCD-32**

■ multifunction

0.09	-	-	0.15...0.6	12 and 32
0.25	-	-	0.35...1.4	12 and 32
1.5	2.2	3	1.25...5	12 and 32
5.5	5.5	9	3...12	12 and 32
7.5	9	15	4.5...18	32
15	15	18.5	8...32	32

Class 5 to 35

LUCM-X6BL
LUCM-1XBL
LUCM-05BL
LUCM-12BL
LUCM-18BL
LUCM-32BL

Basic reference, to be completed by adding the voltage code ⁽¹⁾

Parameter entry, monitoring of parameter values and consultation of logs are carried out:

- either on the front panel, using the built-in display window/ keypad,
- or via an operator terminal,
- or via a PC or a PDA with PowerSuite software,
- or remotely, via a Modbus communication bus.

Programming of the product via the keypad requires a $\sim$ 24 V auxiliary power supply.



Standard control circuit voltages (for other voltages, please consult your Regional Sales Office)

Volts	24	48...72	110...240
$\sim$	BL	-	-
$\sim$	B	-	-
$\sim$ or $\sim$	-	ES ⁽¹⁾	FU ⁽²⁾

(1) $\sim$ 48...72 V, $\sim$ 48 V. (2) $\sim$ 110...220 V, $\sim$ 110...240 V.



Above 32 A, the model U controller provides a motor starter management solution identical to that provided by TeSys model U starter-controller.

Used in conjunction with a short-circuit protection device and a contactor, it provides a motor starter whose functions are the same as those of a TeSys model U starter-controller and, in particular, provides motor starter overload protection and control functions.

It consists of a control unit whose adjustment range is compatible with the secondary of current transformers, plus a control base which also allows fitment of a function module or a communication module.

It requires a $\pm$ 24 V external power supply.

5	Control bases		For use with contactors	
	Current transformers (auxiliary supply voltage 24 VDC)			
	Connection	screw		
	Control	screw	LUT-M10BL TeSys model d	
			LUT-M20BL TeSys model F	



Control units		Class 10		Class 20		Class 5 to 30	
For 3-phase motors							
Setting range	0.35...1.05						
■ advanced		LUCB-T1BL		LUCD-T1BL			
■ multifunction						LUCM-T1BL	



Accessories		
Module		
■ alarm	LUF-W10	
■ communication		Modbus
		LUL-C033
■ indication of motor load		4...20 mA
		LUF-V2

5

Current transformers						
Operational current						
■ primary		30	50	100	200	400
■ secondary	1	LUT-C0301	LUT-C0501	LUT-C1001	LUT-C2001	LUT-C4001
						LUT-C8001



Starters

■ D.O.L.

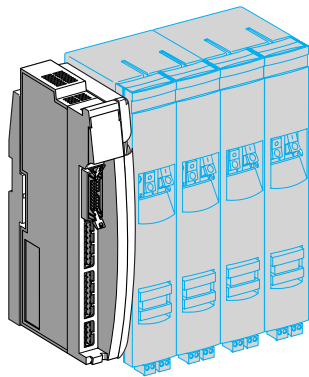
■ standard

Standard power ratings of 3-phase motors in category AC3 400/415 V		4...37 kW	0.06...45 kW	0.55...30 kW	0.37...5.5 kW	0.25...45 kW
Starters	manual	●	●	●	-	-
	auto	-	-	-	●	●
Isolating device	switch-disconnector-fuse	●	-	-	-	-
	circuit-breaker	-	●	●	●	-
	fuse carrier	-	-	-	-	-
Protection	short-circuit	-	●	●	●	-
	overload	-	●	●	●	●
Communication		-	-	-	-	-
Basic reference	Non reversing	V•F	GV2-ME	GV2-LC	LE1-GVME	LE1-M
		VCFN	GV3-CE	GV-NGC		LE1-D
		V•FX				
	Reversing					LE2-K
						LE2-D





					■ 2 stage	
	■ safety applications			■ AS-i bus	standard star-delta	
2.2...45 kW	0.06...11 kW	0.06...9 kW	0.06...9 kW	0.06...5.5 kW	5.5...132 kW	7.5...75 kW
-	●	-	-	-	-	-
●	-	●	●	●	●	●
-	-	●	-	-	-	-
-	●	●	●	●	-	-
●	-	-	-	-	-	●
●	●	●	●	●	-	●
●	●	●	●	●	●	●
-	-	-	-	●	-	-
LE4-K	GV2-ME	LG1-K	LG7-K	LF1-M	LE3-K	LE6-D
LE4-D		LG1-D	LG7-D	LF1-P	LE3-D	LE3-D
			LJ7-K	LF7-P	LE3-F	
LE8-K			LG8-K	LF2-M		
LE8-D			LJ8-K	LF2-P		
LE2-D				LF8-P		

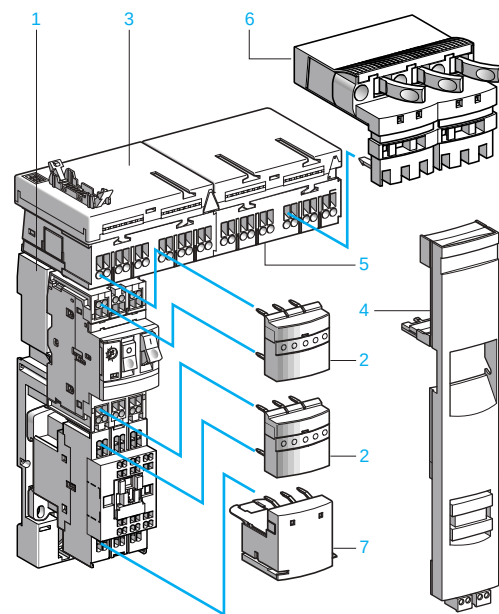


Tego Power is a modular system which standardises and simplifies the implementation of motor starters with its prewired control and power circuits.

Installation of a motor starter is therefore quick, simple, safe and flexible, with no wires needed for connection. In addition, this system enables the motor starter to be customised at a later date, reduces maintenance time and optimises panel space by reducing the number of terminals and intermediate interfaces and the amount of ducting.

Quickfit technology for TeSys motor starter components with spring terminals is designed for use with model d contactors (9 to 32 A) and with GV2-ME motor circuit-breakers.

Communication modules			
■ with terminal block			
Number of HE10 connectors		-	2
Type of connection or bus:	screw terminals	APP-1CV	
	spring terminals	APP-1CE	
■ with connector			
	HE10	APP-1CH	
■ via bus			
	AS-Interface	APP-1CA32	
	Fipio	APP-1CFI0	APP-1CFI2
	INTERBUS	APP-1CIB0	APP-1CIB2
	INTERBUS optical		APP-1CIB5
	Profibus DP	APP-1CPF0	APP-1CPF2
	CANopen	APP-1CCO0	APP-1CCO2
	DeviceNet	APP-1CDN0	APP-1CDN2



System using Quickfit technology, for TeSys motor starters with spring terminals.

The motor starters concerned are those formed by combining:

- GV2-ME circuit-breakers,
- with 9 to 25 A model d contactors (LC1).

Consisting of simple parts, Tego Power with Quickfit technology can be used to build motor starter assemblies up to 11.5 kW/400 V.

The main components which make up this range are:

- For the power circuit
 - a power kit comprising, for each starter, a plate **1** for mounting the contactor and the circuit-breaker and two power connection modules **2**,
 - a power splitter box **5** for 2 or 4 starters,
 - an upstream terminal block **6** for a power supply up to 63 A (16 mm²),
 - a downstream terminal block **7** for connection of the motor power supply cables and of the protection or earth cables (6 mm²).
- For the control circuit
 - a control splitter box **3** for 2 or 4 starters, with control-command data on HE10 connector. The data on 4 or 8 starters can be fed back directly to the PLC via an 8I/8O or 16I/8O Advantys Telefast ABE7 cable, or to a fieldbus module (AS-Interface, Fipio, CANopen, DeviceNet, INTERBUS, Profibus),
 - a control circuit connection module **4** which plugs directly into the contactor and the circuit-breaker on each starter. This module concentrates the motor starter control-command data. It incorporates the circuit-breaker status data in the prewiring of the contactor control circuit.



Basic components

Assembly and power connection kit comprising:

■ 1 mounting plate LAD-311 for GV2-ME	
■ 2 power connection modules LAD-341	LAD-352

Reversing kit:

■ 1 busbar set and 1 mechanical interlock ⁽⁵⁾
--

Upstream terminal blocks

Application	Max. connection c.s.a.	
Power supply to 1 or 2 power splitter boxes		
or a power control splitter box	16 mm ² ⁽⁶⁾	LAD-3B

Downstream terminal blocks

Connection of motor cables	6 mm ²	LAD-331
----------------------------	-------------------	----------------

Prewired power connections

(control connection factory wired)

	Type of control-command connection on control system side	No. of I/O per starter	Extension by	No. of starters	
Power splitter box, 60 A	-	-	LAD-32•	2 4	LAD-322 LAD-324
Power (60 A) and control splitter box	1 x HE 10 8I/8O	1I/1O ⁽¹⁾	APP 2R•E	4	APP-2R4H1
	1 x HE 10 16I and 1 x HE 10 8O	2I/1O ⁽¹⁾	up to 8 starters	4	APP-2R4H2
	Via module APP-1C••• ⁽²⁾	-		2 4	APP-2R2E APP-2R4E
	Model d coil voltage	Type of coil control relay		Type of starter	
Control connection module	~ 12...240 V or ~ 24...125 V	Electromechanical ⁽³⁾		D.O.L.	APP-2D1
(incorporating contact block GV-AE20)				Reversing	APP-2D2
	~ 24 V	Without relay ⁽⁴⁾		D.O.L.	APP-2D1D
				Reversing	APP-2D2D

Spare or replacement parts

	Type of control-command connection on control system side	No. of I/O per starter	No. of starters	
Plate for mounting a				
GV2-M circuit-breaker	-	-	1	LAD-311
Power connection module	-	-	1	LAD-341
Control-command splitter boxes	1 x HE 10 8I/8O	1I/1O	4	APP-2R4H3
	1 x HE 10 16I and 1 x HE 10 8O	2I/1O	4	APP-2R4H4
(single, for mounting on a power splitter box)	Via module APP-1C••• ⁽²⁾	-	2 4	APP-2R2C APP-2R4C
Replacement electromechanical relay		-	1	ABR-7S23
(for control connection module)				

(1) Cables with 20-way Advantys Telefast ABE7 HE 10 connector. (2) Connection to an APP-1C••• module via adapter APP-2CX. (3) Relay supplied mounted in the front panel of the control connection. (4) The use of model d low consumption contactors is recommended.

(5) The following are needed to build a model d reversing starter: 2 contactors LC1 D, 2 mounting plates LAD-311, 1 mechanical interlock LAD-9V2, 1 upstream power connection kit and 1 downstream connection kit: - upstream power connection kit LAD-9V10: installed in the Quickfit system with power connection module LAD-341 – downstream connection kit LAD-9V11: installed in the Quickfit system with outgoing terminal block LAD-331 (if LAD-331 is not used, replace LAD-9V11 with LAD-9V13).

(6) Cables with one end pre-crimped are available to allow fast connection. References: 1 set of 3 x 6 mm² cables (length 1 m LAD-3B061, length 2 m LAD-3B062 and length 3 m LAD-3B063), 1 set of 3 x 10 mm² cables (length 1 m LAD-3B101, length 2 m LAD-3B102 and length 3 m LAD-3B103), 1 set of 3 x 16 mm² cables (length 1 m LAD-3B161, length 2 m LAD-3B162 and length 3 m LAD-3B163).

Components Lighting applications (AC5)

Sodium vapour lamps															
■ low pressure															
	Non corrected							With parallel compensation							
P (W)	3-	55	90	135	150	180	200	35	55	90	135	150	180	200	
IB (A)	1.2	1.6	2.4	3.1	3.2	3.3	3.4	0.3	0.4	0.6	0.9	1	1.2	1.3	
C (μF)	-	-	-	-	-	-	-	17	17	25	36	36	36	36	LC1-
Max. number of lamps accordint to P (W), per contactor	6	5	3	2	2	2	2	-	-	-	-	-	-	-	K09
	10	7	5	3	3	3	3	40	30	-	-	-	-	-	D09, D12
	12	9	6	4	4	4	4	50	37	25	-	-	-	-	D18
	15	11	7	6	5	5	5	63	47	31	21	19	15	14	D25
	21	16	10	8	8	7	7	86	65	43	28	26	21	20	D32, D38
	27	20	13	10	10	10	9	110	82	55	36	33	27	25	D40
	35	26	17	13	13	12	12	140	105	70	46	42	35	32	D50, D65
	50	37	25	19	18	18	17	200	150	100	66	60	50	46	D80, D95
	100	75	50	38	36	36	34	400	300	200	132	120	100	92	D115, D150
	140	104	70	54	52	50	48	560	420	280	186	168	140	128	F185
	152	114	76	58	56	54	54	606	454	302	202	182	152	140	F225
	174	130	88	68	66	64	62	700	524	350	232	210	174	162	F265
	198	148	98	76	74	72	70	792	594	396	264	238	198	182	F330
	250	188	124	96	94	90	88	1002	752	502	334	300	250	252	F400
	338	254	168	130	126	122	118	1352	1014	676	450	406	338	312	F500
	496	372	248	192	186	180	174	1982	1488	992	660	594	496	458	F600, F800
■ high pressure															
P (W)	150	250	400	700	1000			150	250	400	700	1000			
IB (A)	1.9	3.2	5	8.8	12.4			0.84	1.4	2.2	3.9	5.5			
C (μF)	-	-	-	-	-			20	32	48	96	120			LC1-
Max. number of lamps accordint to P (W), per contactor	4	2	1	-	-			-	-	-	-	-			K09
	6	3	2	1	-			-	-	-	-	-			D09, D12
	7	4	3	1	1			17	-	-	-	-			D18
	10	5	3	2	1			22	13	8	-	-			D25
	13	8	5	2	2			30	18	11	6	-			D32, D38
	17	10	6	3	2			39	23	15	8	6			D40
	22	13	8	4	3			50	30	19	10	7			D50, D65
	31	18	12	6	4			71	42	27	15	10			D80, D95
	62	36	24	12	8			142	84	54	30	20			D115, D150
	88	52	34	18	14			200	120	76	42	30			F185
	96	56	36	20	16			216	130	82	46	32			F225
	110	66	42	24	18			250	150	94	54	38			F265
	124	74	48	26	20			282	170	108	60	42			F330
	158	94	60	34	24			358	214	136	76	54			F400
	214	126	80	46	32			482	290	184	104	74			F500
	312	186	118	68	48			708	424	270	152	108			F630, F800
Metal iodine vapour lamps															
P (W)	250	400	1000	2000				250	400	1000	2000				
IB (A)	2.5	3.6	9.5	20				1.4	2	5.3	11.2				
C (μF)	-	-	-	-				32	32	64	140				LC1-
Max. number of lamps accordint to P (W), per contactor	3	2	-	-				-	-	-	-				K09
	4	3	1	-				-	-	-	-				D09, D12
	6	4	1	-				-	-	-	-				D18
	7	5	2	-				13	9	-	-				D25
	10	7	2	1				18	13	4	-				D32, D38
	13	9	3	1				23	16	6	-				D40
	16	11	4	2				30	21	7	-				D50, D65
	24	16	6	3				42	30	11	5				D80, D95
	48	32	12	6				84	60	22	10				D115, D150
	66	46	18	8				120	84	32	14				F185
	72	50	20	10				130	90	34	16				F225
	84	58	22	12				150	104	40	18				F265
	94	66	24	14				170	118	44	20				F330
	120	84	32	16				214	150	56	26				F400
	162	112	42	20				290	202	76	36				F500
	238	164	62	30				424	298	112	52				F630, F800

Incandescent and halogen lamps

P (W)	60	75	100	150	200	300	500	750	1000	
IB (A)	0.27	0.34	0.45	0.68	0.91	1.40	2.30	3.40	4.60	LC1-
Max. number of lamps	35	28	21	14	10	6	4	2	2	K09
accordint to P (W), per contactor	59	47	35	23	17	11	7	4	3	D09, D12
	77	61	46	30	23	15	9	6	4	D18
	92	73	55	36	27	18	11	7	5	D25
	129	103	77	51	38	25	15	10	7	D32, D38
	163	129	97	64	48	31	19	13	9	D40
	207	164	124	82	62	40	24	16	12	D50, D65
	296	235	177	117	88	57	34	23	17	D80, D95
	430	340	256	170	126	82	50	34	24	D115
	466	370	280	184	138	90	54	36	26	D150
	710	564	426	282	210	136	82	56	40	F185
	770	610	462	304	228	148	90	60	44	F225
	888	704	532	352	262	170	104	70	52	F265
	1006	800	604	400	298	194	118	80	58	F330
	1274	1010	764	504	378	244	148	100	74	F400
	1718	1364	1030	682	508	330	200	136	100	F500
	2328	1850	1396	924	690	448	272	184	136	F600
	2776	2204	1666	1102	824	534	326	220	162	F800

Fluorescent lamps with starter

■ single fitting

	Non-corrected					With parallel correction					
P (W)	20	40	65	80	110	20	40	65	80	110	
IB (A)	0.39	0.45	0.70	0.80	1.2	0.17	0.26	0.42	0.52	0.72	
C (μF)	-	-	-	-	-	5	5	7	7	16	LC1-
Max. number of lamps	24	21	13	12	8	56	36	22	18	-	K09
accordint to P (W), per contactor	41	35	22	20	13	94	61	38	30	22	D09, D12
	53	46	30	26	17	123	80	50	40	29	D18
	66	57	37	32	21	152	100	61	50	36	D25
	89	77	50	43	29	205	134	83	67	48	D32, D38
	112	97	62	55	36	258	169	104	84	61	D40
	143	124	80	70	46	329	215	133	107	77	D50, D65
	205	177	114	100	66	470	367	190	153	111	D80, D95
	410	354	228	200	132	940	614	380	306	222	D115, D150
	492	426	274	240	160	1128	738	456	368	266	F185
	532	462	296	260	172	1224	800	490	400	288	F225
	614	532	342	300	200	1412	922	570	462	332	F265
	696	604	388	340	226	1600	1046	648	522	378	F330
	882	764	490	430	286	2024	1322	818	662	478	F400
	1190	1030	662	580	386	2728	1724	1104	892	644	F500
	1612	1398	698	786	524	3700	2418	1498	1210	874	F630, F800

■ twin fitting

P (W)	2x20	2x40	2x65	2x80	2x110	2x20	2x40	2x65	2x80	2x110	
IB (A)	2x0.22	2x0.41	2x0.67	2x0.82	2x1.1	2x0.13	2x0.24	2x0.39	2x0.48	2x0.65	LC1-
Max. number of lamps	2x21	2x11	2x7	2x5	2x4	2x36	2x20	2x12	2x10	2x7	K09
accordint to P (W), per contactor	2x36	2x18	2x10	2x8	2x6	2x60	2x32	2x20	2x16	2x12	D09, D12
	2x46	2x24	2x14	2x12	2x8	2x80	2x42	2x26	2x20	2x16	D18
	2x58	2x30	2x18	2x14	2x10	2x100	2x54	2x32	2x26	2x20	D25
	2x78	2x42	2x26	2x20	2x14	2x134	2x72	2x44	2x36	2x26	D32, D38
	2x100	2x52	2x32	2x26	2x18	2x168	2x90	2x56	2x44	2x32	D40
	2x126	2x68	2x40	2x34	2x24	2x214	2x116	2x70	2x58	2x42	D50, D65
	2x180	2x96	2x58	2x48	2x36	2x306	2x166	2x102	2x82	2x60	D80, D95
	2x360	2x194	2x118	2x96	2x72	2x614	2x332	2x204	2x166	2x122	D115, D150
	2x436	2x234	2x142	2x116	2x86	2x738	2x400	2x246	2x200	2x148	F185
	2x472	2x254	2x154	2x126	2x94	2x800	2x432	2x266	2x216	2x160	F225
	2x544	2x292	2x178	2x146	2x108	2x922	2x500	2x308	2x250	2x184	F265
	2x618	2x332	2x202	2x166	2x124	2x1046	2x566	2x348	2x282	2x208	F330
	2x782	2x420	2x256	2x210	2x156	2x1322	2x716	2x440	2x358	2x264	F400
	2x1054	2x566	2x346	2x282	2x210	2x1784	2x966	2x594	2x482	2x356	F500
	2x1430	2x766	2x468	2x384	2x286	2x2418	2x1310	2x806	2x654	2x484	F630, F800

Components

Capacitor switching

0...1000 kVAR

On-load capacitor switching

for bar-mounted contactors, a.c. control circuit

	Without damping resistor				With damping resistor			
Rated operational voltage (V)	Number of poles	Max. operational current (A)		Basic reference, to be completed	Number of poles	Max. operational current (A)		Basic reference, to be completed
		50 Hz	180 Hz			50 Hz	180 Hz	
1300	1	80	60	CE5-FB11•11	1 + 1 staggered pole	80	60	CE6-FB12•11
		160	125	CE5-GB11•11		160	125	CE6-GB12•11
		240	190	CE5-HB11•11		240	190	CE6-HB12•11
	2	80x2	60x2	CE5-FB21•11				
		160x2	125x2	CE5-GB21•11				
		240x2	190x2	CE5-HB21•11	2 + 2 staggered poles	240x2	190x2	CE6-HB22•11
3	80x3	60x3	CE5-FB31•11					
	160x3	125x3	CE5-GB31•11					
	240x3	190x3	CE5-HB31•11					
1500	2 poles in series	160	125	CE5-GB12•11	1 + 2 staggered poles	160	125	CE6-GB13•11
		280	220	CE5-HB12•11		280	220	CE6-HB13•11
	2 x 2 poles in series	280x2	220x2	CE5-HB22•11				
2000	2 poles in series	240	190	CS5-HB12•11	1 + 2 staggered poles	240	190	CS6-HB13•11
	2 x 2 poles in series	240x2	190x2	CS5-HB22•11				
3000	3 poles in series	280	220	CS5-HB13•11	1 + 3 staggered poles	280	220	CS6-HB14•11

Standard control circuit voltages

~ supply

Volts	110	125	127	200	220	240	250	380	415	440	500
50 Hz (coil LX1)	F	-	G	L	M	U	-	Q	N	R	S



Maximum operational power of contactors

■ standard contactors

Operational power at 50/60 Hz

$\theta \geq 40\text{ }^{\circ}\text{C}$			$\theta \geq 55\text{ }^{\circ}\text{C}$			Peak current	Contactor
220 V	400 V	600 V	220 V	400 V	600 V		size
240 V	440 V	690 V	240 V	440 V	690 V		
kVAR	kVAR	kVAR	kVAR	kVAR	kVAR	A	
6	11	15	6	11	15	560	LC1-D09, D12
9	15	20	9	15	20	850	LC1-D18
11	20	25	11	20	25	1600	LC1-D25
14	25	30	14	25	30	1900	LC1-D32, D38
17	30	37	17	30	37	2160	LC1-D40
22	40	50	22	40	50	2160	LC1-D50
22	40	50	22	40	50	3040	LC1-D65
35	60	75	35	60	75	3040	LC1-D80, D95
50	90	125	38	75	80	3100	LC1-D115
60	110	135	40	85	90	3300	LC1-D150
70	125	160	50	100	100	3500	LC1-F185
80	140	190	60	110	110	4000	LC1-F225
90	160	225	75	125	125	5000	LC1-F265
100	190	275	85	140	165	6500	LC1-F330
125	220	300	100	160	200	8000	LC1-F400
180	300	400	125	220	300	10000	LC1-F500
250	400	600	190	350	500	12000	LC1-F630
250	400	600	190	350	500	14200	LC1-F800
200	350	500	180	350	500	25000	LC1-BL
300	550	650	250	500	600	25000	LC1-BM
500	8350	950	400	750	750	25000	LC1-BP
600	1100	1300	500	1000	1000	25000	LC1-BR

■ special contactors

Operational power at 50/60 Hz

$\theta \geq 55\text{ }^{\circ}\text{C}$			Instantaneous auxiliary contacts		Tightening torque on cable end	Basic reference, to be completed
220 V	400 V	660 V				
240 V	440 V	690 V				
kVAR	kVAR	kVAR	N/O	N/C	N.m	
6.7	12.5	18	1	1	1.2	LC1-DFK11••
			-	2	1.2	LC1-DFK02••
8.5	16.7	24	1	1	1.7	LC1-DGK11••
			-	2	1.7	LC1-DGK02••
10	20	30	1	1	1.9	LC1-DLK11••
			-	2	1.9	LC1-DLK02••
15	25	36	1	1	2.5	LC1-DMK11••
			-	2	2.5	LC1-DMK02••
20	33.3	48	1	2	5	LC1-DPK12••
25	40	58	1	2	5	LC1-DTK12••
40	60	92	1	2	9	LC1-DWK12••

Standard control circuit voltages

~ supply

Volts	24	42	48	110	115	220	230	240	380	400	415	440
50/60 Hz (coil LX1)	B7	D7	E7	F7	FE7	M7	P7	U7	Q7	V7	N7	R7



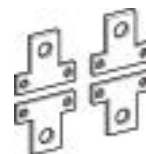
Maximum operational current (device in open air)

Contactors			LC1-/LP1-K09	LC1-/LP1-K12	LC1-D09	LC1-DT20	LC1-D12	LC1-D18	LC1-D25	LC1-D32	LC1-D38	LC1-D40
■ 3-pole												
■ 4-pole												
LC2- changeover contactor pairs, factory assembled					K09004	K12004	DT20	DT25	DT32	DT40		
Operational current in AC-1, in A,	≥ 40° C	A	20	20	25	20	25	32	40	50	50	60
according to ambient temperature	≥ 60° C	A	20	20	25	20	25	32	40	50	50	60
	≥ 70° C											
Maximum operational	220/230 V	kW	8	8	9	8	9	11	14	18	18	21
power ≤ 60° C	240 V	kW	8	8	9	8	9	12	15	19	19	23
	380/400 V	kW	14	14	15	14	15	20	25	31	31	37
	415 V	kW	14	14	17	14	17	21	27	34	34	41
	440 V	kW	15	15	18	15	18	23	29	36	36	43
	500 V	kW	17	17	20	17	20	23	33	41	41	49
	660/690 V	kW	22	22	27	22	27	34	43	54	54	65

Increase in operational current by parallel connection of poles

Apply the following coefficients to the currents or powers above; these coefficients take into account an often unbalanced distribution of current between the poles:

- 2 poles in parallel K = 1.6
- 3 poles in parallel K = 2.25
- 4 poles in parallel K = 2.8



Connection accessories for heating applications

Paralleling links for:		Reference
■ model k	2 poles	with screw clamp terminals LA9-E01
	4 poles	with screw clamp terminals LA9-E02
■ model d	2 poles	D09...D38 LA9-D2561
		DT20 and DT25 (4P) LA9-D1261
		DT32...DT40 (4P) LAD-D96061
		D40...D65 LA9-D40961
		D80 LA9-D80961
	3 poles	D09...D38 LAD-9P3 ⁽¹⁾
		D80 LA9-D80962
	4 poles	DT20...DT25 LA9-D1263
		D40...D65 LA9-D40963
		D80 LA9-D80963
■ model F	2 to 2	LC1-F1154 LA9-FF602
		LC1-F1504, F1854 LA9-FG602
		LC1-F2254, F2654, F3304, F4004 LA9-FH602
		LC1-F5004 LA9-FK602
		LC1-F6304 LA9-FL602

(1) Link that can be split, allowing parallel connection of 2 poles



LC1-D50	LC1-D65	LC1-D80	LC1-D115	LC1-F185	LC1-F225	LC1-F265	LC1-F330	LC1-F400	LC1-F500	LC1-F630	LC1-F780	LC1-F800	LC1-BL	LC1-BM	LC1-BP	LC1-BR
	D65004	D80004	D115004	F1854	F2254	F2654										
80	80	125	250	275	315	350	400	500	700	1000	1600	1000	800	1250	2000	2750
80	80	125	200	275	280	300	360	430	580	850	1350	850	700	1100	1750	2400
				180	200	250	290	340	500	700	1100	700	600	900	1500	2000
29	29	45	80	90	100	120	145	170	240	350	550	350	300	425	700	1000
31	31	49	83	100	110	125	160	180	255	370	570	370	330	450	800	1100
50	50	78	135	165	175	210	250	300	430	600	950	600	500	800	1200	1600
54	54	85	140	170	185	220	260	310	445	630	1000	630	525	825	1250	1700
58	58	90	150	180	200	230	290	330	370	670	1050	670	550	850	1400	2000
65	65	102	170	200	220	270	320	380	660	750	1200	750	600	900	1500	2100
86	86	135	235	280	300	370	400	530	740	1000	1650	1000	800	1100	1900	2700

Mounting accessories for changeover contactor pairs

(for customer assembly)

Contactor type	Set of power connections	Mechanical interlock	Contactor type	Set of power connections	Mechanical interlock
2 contactors, vertically mounted					
■ 4-pole changeover pairs with locking device components					
LC1-B		EZ2-LB0601			
2 identical contactors, horizontally mounted					
■ with electrical interlocking kit for the contactors					
LC1-DT20...DT40	LAD-T9R1V ⁽¹⁾				
■ mechanical interlock with integral electrical interlocking					
LC1-D65004	LA9-D6570	LA9-D4002	LC1-D80004	LA9-D8070	LA9-D4002
LP1-D80004	LA9-D8070	LA9-D8002	LC1-D115004	LA9-D11570	LA9-D11502
■ without electrical interlocking ⁽²⁾					
LC1-DT20...DT32	LAD-T9R1 ⁽²⁾		LC1-DT40 and DT60	LAD-T9R2 ⁽²⁾	
LC1 or LP1-D65004	LA9-D6570	LA9-D50978	LC1-D80004	LA9-D8070	LA9-D50978
LP1-D80004	LA9-D8070	LA9-D80978			
2 contactors of identical rating, horizontally mounted					
■ 4-pole changeover pairs					
LC1-F1154	LA9-FF977	LA9-FF970	LC1-F1504	LA9-F15077	LA9-FF970
LC1-F1854	LA9-FG977	LA9-FG970	LC1-F2254	LA9-F22577	LA9-FG970
LC1-F2654	LA9-FH977	LA9-FJ970	LC1-F3304	LA9-FJ977	LA9-FJ970
LC1-F4004	LA9-FJ977	LA9-FJ970	LC1-F5004	LA9-FK977	LA9-FJ970
LC1-F6304	LA9-FL977	LA9-FL970			
■ 3-pole changeover pairs with electrical interlocking					
LC1-D115 and D150	LA9-D11571	LA9-D11502			
reversers assembled using 2 contactors, vertically mounted					
■ 4-pole changeover pairs using contactors of identical rating ⁽³⁾			■ 3 or 4-pole changeover pairs using contactors of different rating		
			At bottom	At top	
LC1-F1154 or F1505	(3)	LA9-FF4F	LC1-F115 or F1154	LC1-F185 or F1854	LA9-FG4F
LC1-F1854	(3)	LA9-FG4G	or LC1-F150 or F1504	LC1-F225 or F2254	LA9-FG4F
LC1-F2254	(3)	LA9-FG4G		LC1-F265 or F2654	LA9-FH4F
LC1-F2654 or F3304	(3)	LA9-FH4H		LC1-F300 or F3304	LA9-FH4F
LC1-F4004	(3)	LA9-FJ4J		LC1-F400 or F4004	LA9-FJ4F
LC1-F5004	(3)	LA9-FK4K		LC1-F500 or F5004	LA9-FK4F
LC1-F6304	(3)	LA9-FL4L		LC1-F630, F6304 or F800	LA9-FL4F
LC1-F7804	(4)	LA9-FX971 ⁽⁴⁾	LC1-F185 or F1854	LC1-F265 or F2654	LA9-FH4G
			or LC1-F225 or F2254	LC1-F330 or F3304	LA9-FH4G
				LC1-F400 or F4004	LA9-FJ4G
				LC1-F500 or F5004	LA9-FK4G
				LC1-F630, F6304 or F800	LA9-FL4G
			LC1-F265 or F2654	LC1-F400 or F4004	LA9-FJ4H
			or LC1-F330 or F3304	LC1-F500 or F5004	LA9-FK4H
				LC1-F630, F6304 or F800	LA9-FL4H
			LC1-F400 or F4004	LC1-F500 or F5004	LA9-FK4J
				LC1-F630, F6304 or F800	LA9-FL4J
			LC1-F500 or F5004	LC1-F630, F6304 or F800	LA9-FL4K

(1) Including mechanical interlock, (2) Order separately 2 auxiliary contact blocks LAD-N*1 to obtain electrical interlocking between the two contactors, (3) Power connections to be made by the customer. (4) Double mechanical interlock mechanism with 2 interlock connecting rods and 4 power connecting links.

Power supplies to keep you running

Phaseo *Creator of energy*

Regulated switch mode power supplies ABL1 / ABL7

Designed to supply the voltage required for control and power circuits of automation system equipment from 0.3 to 40 A.

With its dual upstream/downstream display for quick diagnostics, an output voltage that can be adjusted to compensate for voltage drops on the line, protection against overloads and short-circuits, the range of Phaseo power supplies is quite *simply* efficient.



Compact power supplies
ABL7CEM



Modular power supplies
ABL7RM



Universal power supplies
ABL7RE/RP



AS-Interface dedicated power supplies
ASiABL



Process power supplies
ABL7U/REQ



Switch mode power supplies
ABL1REM/RPM

Rectified and filtered power supplies ABL6

For applications which accept fluctuations in the power supply of + or - 10%, and transformers, for converting a 400 V voltage to an AC voltage between 24 V and 230 V.



Single-phase power supplies
ABL6RF



3-phase power supplies
ABL6RT



Transformers with double or single winding
ABL6TD / ABL6TS

The essential guide

A simplified selection guide enabling you to quickly select power supplies.

Contents

■ Power supplies for control circuits

Phaseo ABL7, ABL1, ABL6 6/2 to 6/4

■ Transformers

Phaseo ABL6 6/5

> Switch mode power supplies

Phaseo ABL1

- Power supplies for single-phase 110...230 V dedicated automation systems
- Regulated single-phase 12 and 24 V DC
- Wide offer: power 60 to 240 W
- Anti harmonic filter
- Certification: UL and CSA

> Switch mode power supplies

Phaseo ABL7

- Compact, modular and universal power supplies for single-phase 100 - 240 V applications
- 2-phase/3-phase 380 - 520 V process power supplies
- Dual LED display
- Guaranteed output voltage
- Wide voltage range
- Book format
- Conformity to UL/CSA standards

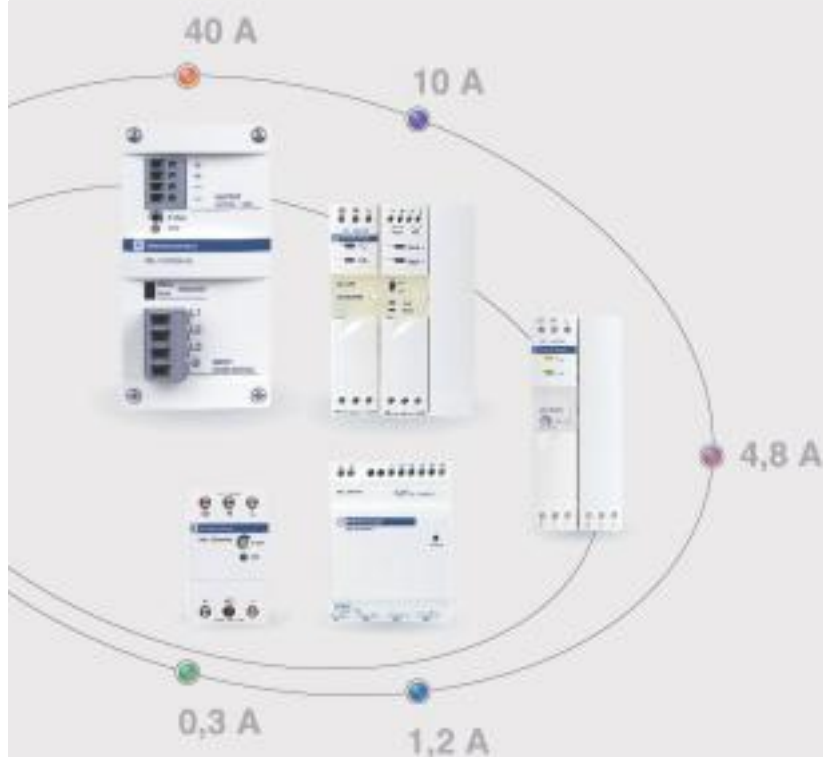
> Rectified and filtered power supplies

Phaseo ABL6R

- Fixed upstream and downstream voltage, power supplies for connection to single-phase and 3-phase mains supplies. Used to supply all machines and processes where a precise 24 V DC is not necessary.
- Single-phase power supply:
1 > 40 A - 24 > 960 W
- 3-phase power supply:
1 > 40 A - 24 > 960 W

> Transformers: Phaseo ABL6T

- Primary voltage: single-phase $\sim$ 230 - 400 V AC $\pm$ 15 V
- Safety and circuit isolation transformers with nominal power ratings between 25 and 2500 VA





Type of power supply		Compact, 1-phase regulated switch mode, wide range AUTO reset of automatic protection		
Input voltage		100...240 V AC, 110...220 V DC (compatible)		
Output voltage		24 V DC		
Nominal Power / Current		7 W / 0.3 A	15 W / 0.6 A	30 W / 1.2 A
Certifications		cULus, TÜV		
Conformity to standards	Safety	UL508, IEC/EN 60950		
	EMC	EN 50081-2, EN 50082-2		
Emission		Conducted and radiated	EN 55011, EN 55022 class A	EN 55011, EN 55022 class A
Dimensions (WxDxH)		45 x 70 x 75 mm	45 x 95 x 75 mm	EN 55011, EN 55022 class B
References		ABL7CEM24003	ABL7CEM24006	ABL7CEM24012



Type of power supply		Modular, 1-phase regulated switch mode AUTO reset of automatic protection		
Input voltage		100...240 V AC		
Output voltage		12 V DC	24 V DC	
Nominal Power / Current		22 W / 1.9 A	30 W / 1.3 A	60 W / 2.5 A
Certifications		UL, CSA, TÜV		
Conformity to standards	Safety	IEC/EN 60950, IEC/EN 61131-2/A11		
	EMC	EN 50081-2, IEC 61000-6-2 (EN 50082-2)		
Emission	Conducted and radiated	EN 55011, EN 55022 class B		
Dimensions (WxDxH)		72 x 70 x 110 mm		
References		ABL7RM1202	ABL7RM2401	ABL7RM24025



Type of power supply		Universal, 1-phase regulated switch mode, wide range AUTO reset of automatic protection					
Input voltage		100...240 V AC, 110...230 V DC (version ABL7RP..)					
Output voltage		24 V DC					
Nominal Power / Current		48 W / 2 A	72 W / 3 A	120 W / 5 A	240 W / 10 A		
Certifications		UL, CSA, TÜV, Ctick					
Conformity to standards	Safety	IEC/EN 60950					
	EMC	EN 50081-2, IEC 61000-6-2 (EN 50082-2)					
	Low frequency harmonic currents	–			EN 61000-3-2	–	EN 61000-3-2
Emission	Conducted and radiated	EN 55011, EN 55022 class B					
Dimensions (WxDxH)		27 x 120 x 120 mm		54 x 120 x 120 mm		135 x 120 x 120 mm	
References		ABL7RE2402	ABL7RE2403	ABL7RE2405	ABL7RP2405(1)	ABL7RE2410	ABL7RP2410(1)

(1) AUTO/MAN reset of automatic protection



For control circuits



Type of power supply		Industrial, 2-phase regulated switch mode AUTO/MAN reset of automatic protection	
Input voltage		2 x 380...415 V AC	
Output voltage		24 V DC	
Nominal Power / Current		120 W / 5 A	240 W / 10 A
Conformity to standards	Safety	IEC/EN 60950	
	EMC	EN 50081-1, EN 50082-2	
	Low frequency harmonic currents	–	
Emission	Conducted and radiated	EN 55011, EN 55022 class B	
Dimensions (WxDxH)		68 x 130 x 127 mm	68 x 154 x 127 mm
References		ABL7REQ24050	ABL7REQ24100



6

Type of power supply		Industrial, 3-phase regulated switch mode, wide range AUTO/MAN reset of automatic protection			
Input voltage		3 x 400...520 V AC			
Output voltage		24 V DC			
Nominal Power / Current		120 W / 5 A	240 W / 10 A	480 W / 20 A	960 W / 40 A
Certifications		cULus, cULus			
Conformity to standards	Safety	IEC/EN 60950			
	EMC	EN 50081-1, EN 50082-2			
	Low frequency harmonic currents	–	EN 61000-3-2		
Emission	Conducted and radiated	EN 55011, EN 55022 class B			
Dimensions (WxDxH)		68 x 171 x 127 mm		84 x 240 x 209 mm	106 x 275 x 242 mm
References		ABL7UES24050	ABL7UPS24100	ABL7UPS24200	ABL7UPS24400



Phaseo

Power supplies
For control circuits



Type of power supply		Industrial, regulated switch mode					
Input voltage		85 V...264 V AC				85 V...132 V AC / 170V...264 V AC	
Output voltage		12 V DC		24 V DC		24 V DC	
Nominal Power / Current		60 W / 5 A	100 W / 8.3 A	60 W / 2.5 A	100 W / 4.2 A	150 W / 6.2 A	240 W / 10 A
Certifications		UL, c CSA us, CE, Ctick					
Conformity to standards	Safety	IEC/EN 60950-1, SELV					
	EMC	EN 55011/55022 c1B, IEC/EN 61000-6-2/3, IEC/EN 61000-4-2, 43, 4, 5, 6, 8, 11, 12					
Dimensions (WxDxH)		150 x 38 x 98	200 x 38 x 98	150 x 38 x 98	200 x 38 x 98	200 x 50 x 98	200 x 65 x 98
References	Without filter	ABL1REM12050	–	ABL1REM24025	ABL1REM24042	ABL1REM24062	ABL1REM24100
	With filter (1)	–	ABL1RPM12083	–	ABL1RPM24042	ABL1RPM24062	ABL1RPM24100

(1) Anti harmonic IEC/EN 61000-3-2

6



Type of power supply			Rectified and filtered									
Input voltage			215/230/245 or 385/400/415 V AC (±10%) 1-phase						380/400/420 V AC (±10%) 3-phase			
Output voltage			24 V DC									
Certifications			cULus									
Nominal power			24 W	60 W	120 W	240 W	360 W	480 W	240 W	480 W	720 W	960 W
Nominal current			1 A	2.5 A	5 A	10 A	15 A	20 A	10 A	20 A	30 A	40 A
Power supply references	1-phase	ABL6RF24.. (2)	01	02	05	10	15	20	–	–	–	–
	3-phase	ABL6RT24.. (2)	–	–	–	–	–	–	10	20	30	40

(2) Complete the reference according to the power and current using the adjacent table (example: ABL6RF2401)

Transformers



Type of transformer		Safety and isolation									
Primary voltage		230/400 V AC (±15%) 1-phase									
Secondary		Single or double winding (see references below)									
Certifications											
Nominal power		25 VA	40 VA	63 VA	100 VA	160 VA	250 VA	400 VA	630 VA	1000 VA	
References, single winding		ABL6TS... (1)									
	Secondary voltage	12 V	02J	04J	06J	10J	16J	25J	–	–	–
		24 V	02B	04B	06B	10B	16B	25B	40B	63B	100B
		115 V	02G	04G	06G	10G	16G	25G	40G	63G	100G
		230 V	02U	04U	06U	10U	16U	25U	40U	63U	100U
References, double winding		ABL6TD... (1)									
	Secondary voltage	24/48 V	02B	04B	06B	10B	16B	25B	40B	63B	100B
		115/230 V	02G	04G	06G	10G	16G	25G	40G	63G	100G

(1) Complete the reference according to the power and voltage using the table below (example: ABL6TS02J)

Pre-wired system and distributed I/O solutions to help you put **everything together**

Advantys

Pre-wired system



Advantys Telefast ABE7

IP20: from the heart of the enclosure...

Simple, quick, reliable and **powerful** It enables quick connection of inputs/outputs to the operative parts. It eliminates unnecessary cabling by replacing the use of PLC terminals and conventional terminal blocks. It comprises a connection cable and 3 types of connection sub-base.

Distributed inputs/outputs



Advantys OTB

Open and **modular**, this optimised block solution enables the creation of separate groups of industrial I/Os, each positioned as near to the machine as possible, that are managed by a master controller (PLC, PC or variable speed drive) via a fieldbus or communication network.



Advantys STB

This **open** I/O modular system integration solution is an I/O platform that also provides a very modular wiring solution and a power supply management system. Right from the start, you will appreciate its powerful and intelligent configuration software, its networking capabilities, its ease of setting-up and its wealth of parametering features.

IP67: ...to the heart of the machine, put them to the test...

Pre-wired system



**Passive splitter boxes
Advantys ABE9**

Compact, they eliminate the need for long and difficult cable runs.

- 4 or 8 channel version with M12 connections

Distributed inputs/outputs



**Monobloc splitter boxes
Advantys FTB**

They enable sensors and actuators to be connected in distributed automation systems using pre-assembled cables, thus reducing wiring time and costs whilst, at the same time, increasing the operational availability of the installation.

Simple, robust and **configurable**.

- Wide range of I/O combinations (16 I, 8 I 8 O, 12 I 4 O, 16 I/O configurable)



**Modular splitter boxes
Advantys FTM**

Powerful, compact and **modular**.

- Up to 256 discrete I/Os per bus module

The essential guide

A simplified selection guide enabling you to quickly select all the products required for interfacing.

Also see:

- **Advantys AS-Interface IP20 and IP67 cabling system** (Chapter 8 "AS-Interface cabling system")



Contents



Distributed I/O solution Advantys STB

■ The intelligence

integrated in Advantys STB and its software responds perfectly to your needs by simplifying the implementation of your automation systems.

■ Simplicity:

Plug-in connectors accelerate and simplify installation and commissioning; removable memory cards enable bus configurations to be copied in a few seconds.

■ Adaptability:

The modular and evolutionary design of the range, I/O modules, network interfaces and options available enable you to design a system suited to your needs.

■ Open:

Advantys STB can be interfaced with the main fieldbuses: CANopen, DeviceNet, Ethernet, Fipio, INTERBUS, Modbus Plus, Profibus DP.

Connection

- Terminal blocks **AB1** 7/2
- Cable ends **DZ5/AZ5** 7/3
- Cabling accessories **XZ** for sensors/actuators, IP67
(see Chapter 1 "Detection")

Interfaces and pre-wired system

- IP20 plug-in relays, **Zelio Relay**
(see Chapter 3 "Automation")
- IP20 pre-wired system
Advantys Telefast ABE7 7/4
- IP20 connection interfaces for Twido
Advantys Telefast ABE7 7/6
- IP67 passive splitter boxes
Advantys ABE9 7/9

Distributed inputs/outputs

- IP20 distributed I/O
Modicon Momentum with processor
(see Chapter 3 "Automation")
- IP20 distributed I/O, optimised block
Advantys OTB 7/8
- IP67 distributed I/O, optimised block
Advantys FTB 7/9
- IP20 distributed I/O, modular system
Advantys STB 7/10 to 7/13
- IP67 distributed I/O, modular system
Advantys FTM 7/14

AS-Interface cabling system

- IP20 interfaces
Advantys AS-Interface
(see Chapter 8 "AS-Interface cabling system")
- IP67 interfaces
Advantys AS-Interface
(see Chapter 8 "AS-Interface cabling system")

Terminal blocks
Insulation displacement technology



Clip-on mounting on 35 mm 25 rails		2-way terminal blocks (sold in lots of 100)	End covers (sold in lots of 10)	2-pole commoning link (1) (sold in lots of 10)
1 mm² c.s.a.	Conducting	AB1AA135U2GR	AB1AAAC122GR	AB1RRAL22
	Protective earth conductor	AB1AATP135U2	AB1AAAC122VE	-
2.5 mm² c.s.a.	Conducting	AB1AA235U2GR	AB1AAAC122GR	AB1RRAL22
	Protective earth conductor	AB1AATP235U2	AB1AAAC122VE	-

(1) For a 3, 4, 5 or 10-pole commoning link replace the last number of the reference (2) by 3, 4, 5 or 10 respectively. (Example: AB1RAL22 becomes AB1RAL23).

Spring clamp technology



Clip-on mounting on 35 mm 25 rails		Terminal blocks (sold in lots of 100)	End covers (sold in lots of 10)	2-pole commoning link (1) (sold in lots of 10)
2.5 mm² c.s.a.	Conducting	AB1RR235U2GR	AB1RRAC242GR	AB1RRAL22 (1)
	Protective earth conductor	AB1RRTP235U2	AB1RRTPAC242	-
4 mm² c.s.a.	Conducting	AB1RR435U2GR	AB1RRAC242GR	AB1RRAL42 (1)
	Protective earth conductor	AB1RRTP435U2	AB1RRTPAC242	-
6 mm² c.s.a.	Conducting	AB1RR635U2GR	-	AB1RRAL62
	Protective earth conductor	AB1RRTP635U2	-	-
10 mm² c.s.a.	Conducting	AB1RR1035U2GR (2)	-	AB1RRAL102
	Protective earth conductor	AB1RRTP1035U2 (2)	-	-
16 mm² c.s.a.	Conducting	AB1RR1635U2GR (2)	-	AB1RRAL162
	Protective earth conductor	AB1RRTP1635U2 (2)	-	-

(1) For a 3, 4, 5 or 10-pole commoning link replace the last number of the reference (2) by 3, 4, 5 or 10 respectively. (Example: AB1RRAL22 becomes AB1RRAL23).

(2) Sold in lots of 50.

Screw clamp technology



Clip-on mounting on 35 mm 25 rails		Terminal blocks (sold in lots of 100)	End covers (sold in lots of 50)	2-pole commoning link (1) (sold in lots of 10)
2.5 mm² c.s.a.	Conducting	AB1VV235U	AB1AC24	AB1ALN22 (1)
	Protective earth conductor	-	-	-
4 mm² c.s.a.	Conducting	AB1VV435U	AB1AC24	AB1ALN42 (1)
	Protective earth conductor	AB1TP435U	-	-
6 mm² c.s.a.	Conducting	AB1VV635U	AB1AC6	AB1ALN62 (1)
	Protective earth conductor	AB1TP635U	-	-
10 mm² c.s.a.	Conducting	AB1VVN1035U (2)	AB1ACN10	AB1ALN102 (1)
	Protective earth conductor	AB1TP1035U (2)	-	-
16 mm² c.s.a.	Conducting	AB1VVN1635U (2)	AB1ACN16	AB1ALN162 (1)
	Protective earth conductor	AB1TP1635U (2)	-	-

(1) For a 3, 4, 5 or 10-pole commoning link replace the last number of the reference (2) by 3, 4, 5 or 10 respectively. (Example: AB1ALN22 becomes AB1ALN23).

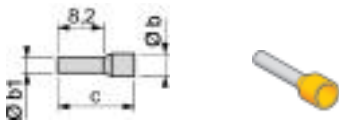
(2) Sold in lots of 50.



DZ5/AZ5

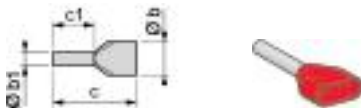
Insulated cable ends
Conforming to DIN 46228⁽¹⁾

mm²	Øb	Øb1	c
0.5	3	1.4	13
0.75	3.1	1.6	13
1	3.4	1.8	13.5
1.5	4	2.1	13.5
2.5	4.6	2.7	14.5



Type			Single cable ends		
			Sold in lots of 10 x 100		
Packaging			Individual or "strings" of bags	Dispenser pack	Strips of 50 in bag
Conductor c.s.a. in mm²	0.5	White	DZ5CE005D	AZ5CE005D	DZ5CEB005D
	0.75	Grey	DZ5CE007D	AZ5CE007D	DZ5CEB007D
	1	Red	DZ5CE010D	AZ5CE010D	DZ5CEB010D
	1.5	Black	DZ5CE015D	AZ5CE015D	DZ5CEB015D
	2.5	Blue	DZ5CE025D	AZ5CE025D	DZ5CEB025D

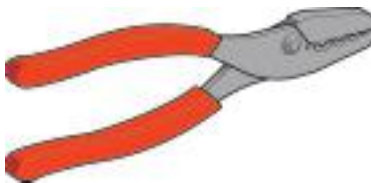
mm²	Øb	Øb1	c	c1
0.75	2.8 x 5	1.8	15	8
1	3.4 x 5.4	2.05	15	8
1.5	3.6 x 6.6	2.3	15	8
2.5	4.2 x 7.8	2.9	18.5	10



Type			Double cable ends	
			Sold in lots of 5 x 100	
Packaging			Dispenser pack	
Conductor c.s.a. in mm²	2 x 0.75	Grey	AZ5DE007D	
	2 x 1	Red	AZ5DE010D	
	2 x 1.5	Black	AZ5DE015D	
	2 x 2.5	Blue	AZ5DE025D	

(1) For insulated cable ends conforming to standard NF C 63-023 , please refer to your Schneider Electric agency.

Cabling accessories



Type		Pliers/cutters				
Functions		Stripping	Cutting/stripping	Crimping	Crimping (ratchet)	Cutting/stripping/crimping (2)
For cable c.s.a.		0.08 to 4 mm²	0.4 to 4 mm²	0.5 to 16 mm²	0.25 to 6 mm²	0.5 to 2.5 mm²
References		AT1PA7	AT2PE1	AT1PA2	AT2PA5	AT2TRIF01

(2) For use with cable ends packed in strips of 50.

Advantys ABE7 Telefast® pre-wired system Passive I/O sub-bases «Discrete»



Type of connection sub-base	Optimum			
Number of channels	16	16		
Max. current per channel	0.5 A	0.5 A		
Control voltage / output voltage	24 VDC / 24 VDC	24 VDC / 24 VDC		
LED per channel	–	With		
Number of terminals per channel/on row number	1/2	1/1	2/2	3/3
Dimensions (WxDxH)	55 x 59 x 67 mm	106 x 60 x 49 mm		
References	–	ABE7H16C11	ABE7H16C21	ABE7H16C31
Cable L = 1 m	ABE7H20E100 (1)	–	–	–
Cable L = 2 m	ABE7H20E200 (1)	–	–	–
Cable L = 3 m	ABE7H20E300 (1)	–	–	–
Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m (2)		ABFH20H100		

(1) Connection cable supplied for PLCs.

(2) For a 2 m length cable, replace the number 1 in the reference by 2, and for a 3 m length, by 3. (Example: ABFH20H100 becomes ABFH20H200).



Type of connection sub-base	Universal					
Number of channels	16					
Max. current per channel	0.5 A					
Control voltage / output voltage	24 VDC / 24 VDC					
LED per channel	–	With	–	–	With	With
Number of terminals per channel/on row number	1/1	1/1	1/2	2/2	2/2	3/3
Dimensions (WxDxH)	125 x 58 x 70 mm		84 x 58 x 70 mm	125 x 58 x 70 mm		
References	ABE7H16R10	ABE7H16R11	ABE7H16R50	ABE7H16R20	ABE7H16R21	ABE7H16R31
Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m: ABFH20H100 (2)						

(2) For a 2 m length cable, replace the number 1 in the reference by 2, and for a 3 m length, by 3. (Example: ABFH20H100 becomes ABFH20H200).



Type of connection sub-base	For counter and analogue channels		Passive distribution with shielding continuity	Distribution and supply of analogue channels
Number of channels	1 counter channel (3)		8	8
Max. current per channel	25 mA		25 mA	25 mA
Control voltage / output voltage	24 VDC / 24 VDC			
Number of terminals per channel	2		2 or 4	2 or 4
Dimensions (WxDxH)	143 x 58 x 70 mm		125 x 58 x 70 mm	125 x 58 x 70 mm
References	ABE7CPA01		ABE7CPA02	ABE7CPA03
Connection cable recommended for Modicon PLCs (4)	TSX Micro	L = 2.5 m	TSXCCPS15	–
	Premium	L = 3 m	TSXCAP030	–

(3) Or 8 inputs + 2 outputs, analogue .

(4) Connection cables available for other PLCs, please refer to your Schneider Electric agency.

Sockets with plug-in relays and terminals



Type of connection sub-base	With soldered solid-state relay inputs		With soldered solid-state relay outputs		With soldered electro-mechanical relay outputs	
Number of channels	16		16		16	
Max. current per channel	12 mA		0.5 A		2 A	5 A
Input voltage / output voltage	24 VDC / -	110 VAC / -	- / 24 VDC		- / 5...30 VDC, 250 VAC	
Number of contacts	—		—		1 N/O	
Polarity distribution	—		—		(1)	Volt-free
Number of terminals per channel	2					
Dimensions (WxDxH)	206 x 58 x 77 mm					
References	ABE7S16E2B1	ABE7S16E2F0	ABE7S16S2B0(2)	ABE7S16S1B2	ABE7R16S111	ABE7R16S210

Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m: **ABFH20H100** (3)

(1) Contact common per group of 8 channels.

(2) With fault detection signal (can only be used with modules with protected outputs).

(3) For a 2 m length cable, replace the number 1 in the reference by 2, and for a 3 m length, by 3. (Example: ABFH20H100 becomes ABFH20H200).



Type of connection sub-base	With plug-in electromechanical relays					
Number of channels	16					
Max. current per channel	5 A	2.5 A		4 A	5 A	
Control voltage / output voltage	24 VDC / 5...24 VDC, 230 VAC					
Number of contacts	1 N/O		1 C/O		2 C/O	
Polarity distribution	(4)	(5)	Volt-free			
Number of terminals per channel	2	2 or 3			2 to 6	
Dimensions (WxDxH)	110x54x89 mm	211 x 64 x 89 mm			272 x 74 x 89 mm	
References	ABE7R16T111	ABE7R16T212	ABE7R16T210	ABE7R16T230	ABE7R16T330	ABE7R16T370

Connection cable recommended for Modicon, TSX Micro and Premium PLCs, L = 1 m: **ABFH20H100** (6)

(4) Contact common per group of 4 channels.

(5) Common on both poles.

(6) For a 2 m length cable, replace the number 1 in the reference by 2, and for a 3 m length, by 3. (Example: ABFH20H100 becomes ABFH20H200).

Connection cables for PLCs ⁽⁷⁾



Input/Output functions		Discrete	Analogue	Analogue and counter	Counter	Axis control
References	Cable L = 1 m	ABFH20H100	—	—	—	—
	Cable L = 2 m	ABFH20H200	ABFY25S200	—	—	TSXCCP213
	Cable L = 2.5 m	—	—	TSXCCPS15	TSXCCPH15	—
	Cable L = 3 m	ABFH20H300	TSXCAP030	—	—	—
	Cable L = 6 m	—	—	—	—	TSXCCP613

(7) Modicon, TSX Micro and Premium PLCs.

For other connection cables and accessories, please refer to your Schneider Electric agency.

Advantys ABE7 Telefast® connection interfaces Sub-bases for Twido controllers



Type of connection sub-base	Discrete inputs/outputs		Solid-state and relay
Number of channels	20	20	20
Number of inputs	12 I (1 common for 12 channels)		
Number of outputs	8 O (1 common for 8 channels)	8 O, fuse protected (1 common for 8 channels)	2 O, solid-state 6 O, relay (1 common for 6 chnls.)
Voltage / current of inputs	24 VDC / 5...7 mA		
Voltage / current of outputs	24 VDC / 0.3 A		Solid-state: 24 VDC / 2 A Relay: 5...30 VDC, 250 VAC / 3 A
LED per channel	—	With	—
Number of terminals per channel/row number	2/2		
Dimensions (WxDxH)	130 x 62.5 x 83 mm		
References	ABE7B20MPN20	ABE7B20MPN22	ABE7B20MRM20

Sub-base for input/output module



Type of connection sub-base	Discrete outputs			Relay
Number of channels	16	16	16	16
Type of outputs	16 I (1 common for 16 channels)	16 O (1 common for 16 channels)	16 O, fuse protected (1 common for 16 channels)	16 O (1 common for 4 channels)
Voltage / current of outputs	24 VDC / 5 mA	24 VDC / 0.1 A		Relay: 5...30 VDC, 250 VAC / 3 A
LED per channel	—		With	—
Number of terminals per channel/row number	2/2			
Dimensions (WxDxH)	106 x 60 x 49 mm		130 x 62.5 x 83 mm	
References	ABE7E16EPN20	ABE7E16SPN20	ABE7E16SPN22	ABE7E16SRM20

Connection cables for Twido



Type of cable	For linking Twido and Telefast sub-base			
For use with	TWDLMDA20DTK/40DTK		TWDDI16DK/32DK/DDO16TK/32TK	
Type of connectors	HE10, 26-pin, at either end		HE10, 20-pin, at either end	
References	Cable	L = 0.5 m	ABFT26B050	ABFT20E050
		L = 1 m	ABFT26B100	ABFT20E100
		L = 2 m	ABFT26B200	ABFT20E200

Accessories

Type of accessory	Optional clip-in terminals	
Number of linked terminals	20	12 + 8
References	ABE7BV20	ABE7BV20TB

Advantys ABE9

Passive splitter boxes

IP67



Type of connection			To PLC using multicore cable	
Number of channels			4	8
Type of female connector			M12, 5-pin	M12, 5-pin
Max. number of signals			8	16
Max. current per channel			4 A	
Max. current per splitter box			16 A (1 mm ²)	
Product certification			cULus	
Dimensions (WxDxH)			50.2 x 42 x 92.2 mm	50.2 x 42 x 149.2 mm
References	Without LEDs	Cable L = 5 m	ABE9C1240L05	ABE9C1280L05
		Cable L = 10 m	ABE9C1240L10	ABE9C1280L10
	With LEDs (1)	Cable L = 5 m	ABE9C1241L05	ABE9C1281L05
		Cable L = 10 m	ABE9C1241L10	ABE9C1281L10

(1) Green LED: power supply status, yellow LED: channel status.



Type of connection			To PLC using M23 connector	
Number of channels			4	8
Type of female connector			M12, 5-pin	M12, 5-pin
Max. number of signals			8	16
Max. current per channel			4 A	
Max. current per splitter box			16 A	
Product certification			cULus	
Dimensions, W X D x H			50.2 x 36.5 x 92.2 mm	50.2 x 36.5 x 149.2 mm
References	Without LEDs		ABE9C1240C23	ABE9C1280C23
	With LEDs (1)		ABE9C1241C23	ABE9C1281C23

(1) Green LED: power supply status, yellow LED: channel status.

Accessories



Type of accessory		Splitter boxes w/o cable		Terminal connectors		Sealing plugs
		Without LEDs	With LEDs	Cable L = 5 m	Cable L = 10 m	(sold in lots of 10)
References	4-channel	ABE9C1240M	ABE9C1241M	ABE9XCA1405	ABE9XCA1410	–
	8-channel	ABE9C1280M	ABE9C1281M	ABE9XCA1805	ABE9XCA1810	–
	for Ø12 connector	–	–	–	–	FTXCM12B

Advantys OTB

IP 20 distributed I/O, optimised block
Interface modules



Discrete Type of bus		CANopen Machine bus	Ethernet TCP/IP network	Modbus Series network
Number of I/Os		20 I/O		
Number of inputs		12 inputs 24 VDC IEC type 1		
Number of outputs		6 relay outputs and 2 solid state 24 VDC outputs		
Connection method		Removable terminal block		
Number of I/O expansion modules (1)		7 discrete or analogue input/output modules, or connection accessories		
Maximum I/O configuration		With interface module base: 132 with screw terminal I/O expansion; 244 with HE10 connector I/O expansion; up to 48 analogue channels		
Supply voltage		24 VDC		
Counting	5 kHz	2 channels, 32 bits (0...4 294 967 295 points) dedicated discrete inputs -up counting/down counting with preset		
	20 kHz	2 channels, 32 bits (0...4 294 967 295 points) up/down counting, up counting, down counting, frequency meter		
Pulse generator, 7 kHz		2 PWM function channels (output with pulse width modulation) or PLS function (pulse generator output)		
Dimension (WxDxH)		55x70x90 mm		
References		OTB1C0DM9LP	OTB1E0DM9LP	OTB1S0DM9LP

(1) for the references of discrete I/O and analogue expansion modules, refer to the Twido or Advantys OTB catalogue

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Accessories

Type of accessory	Commoning modules	Documentation
Usage	For grouping input or output commons, max 8 A	User guides for hardware & software
Positioning	Inter-module	–
Référence	OTB9ZZ61JP	FTXES00

Advantys FTB IP67 distributed I/O, optimised block Interface modules, plastic enclosure



Type of module		CANopen machine bus	DeviceNet Fieldbus	ProfiBus Fieldbus	InterBus Fieldbus
Number of channels		8			
Type of female connector		M12, 5-pin			
Max. voltage / current of inputs		24 VDC type 2/200 mA			
Max. voltage / current of outputs		24 VDC/1.6 A			
Max. current per splitter box		8 A			
Product certification		cULus			
Dimensions, W X D x H		63 x 50.5 x 220 mm			63 x 69 x 220 mm
Diagnostics	Splitter boxes	By LED for: bus and I/O undervoltage + I/O short-circuit + I/O power supply			
	Channels	By LED for: I/O short-circuit + wire breakage fault + I/O fault			
References	16 inputs	FTB1CN16EP0	FTB1DN16EP0	FTB1DP16EP0	FTB1IB16EP0
	8 inputs/8 outputs	FTB1CN08E08SP0	FTB1DN08E08SP0	FTB1DP08E08SP0	FTB1IB08E08SP0
	12 inputs/4 outputs	FTB1CN12E04SP0	FTB1DN12E04SP0	FTB1DP12E04SP0	FTB1IB12E04SP0
	16 configurable inputs/outputs	FTB1CN16CP0	FTB1DN16CP0	FTB1DP16CP0	FTB1IB16CP0

Interface modules, metal enclosure



Type of module		CANopen	DeviceNet	ProfiBus
Number of channels		8		
Type of female connector		M12, 5-pin		
Max. voltage / current of inputs		24 VDC type 2/200 mA		
Max. voltage / current of outputs		24 VDC/1.6 A		
Max. current per splitter box		8 A		
Product certification		cULus		
Dimensions (WxDxH)		62.7 x 38.9 x 224.7 mm		
Diagnostics	Splitter boxes	By LED for: bus and I/O undervoltage + I/O short-circuit + I/O power supply		
	Channels	By LED for: I/O short-circuit + wire breakage fault + I/O fault		
References	16 inputs	FTB1CN16EM0	FTB1DN16EM0	FTB1DP16EM0
	8 inputs/8 outputs/configurable outputs	FTB1CN08E08CM0	FTB1DN08E08CM0	FTB1DP08E08CM0
	16 configurable inputs/outputs	FTB1CN16CM0	FTB1DN16CM0	FTB1DP16CM0

Advantys STB

IP20 Distributed I/O, modular system

Communication modules



Type of module NIM		Ethernet TCP/IP network
Binary speed		10 Mbps
Protocol		Modbus TCP/IP
Transparent Ready	Class	B20
	Embedded Web server	Standard services
	Ethernet services	SNMP agent, FDR client (replacement of faulty equipment), BOOTP (allocation of IP addresses by a server)
Max. number of addressable I/O modules		32 per island
Dimensions (WxDxH)		40x70x128,3 mm
Reference	Standard	STBNIP2212



Type of module NIM		Machine bus CANopen	Fieldbus Fipio	INTERBUS	Profibus DP
Max. number of addressable I/O modules		32 per island (1) (2)	32 per island (1)	32 per island (1) (2)	32 per island (1) (2)
Binary speed		10 K...1 Mbps	1 Mbps	0.5 Mbps	9.6 K...12 Mbps
Dimensions (WxDxH)		40x70x128,3 mm			
Reference	Standard	STBNCO2212	STBNFP2212	STBNIB2212	STBNDP2212
	Basic	STBNCO1010	–	STBNIB1010	STBNDP1010

(1) On 7 segments max.

(2) 12 per island on 1 segment max for basic versions.



Type of module		Other networks	
		Modbus Plus	DeviceNet
Max. number of addressable I/O modules		32 per island	32 per island
Speed		1 Mbps	125, 250 or 500 Kbps
Dimensions (WxDxH)		40x70x128,3 mm	125, 250 or 500 Kbps
Reference	Standard	STBNMP2212	STBNDN2212
	Basic	–	STBNDN1010

Connection accessories

Type of accessory		Removable terminals for 24 VDC power supply	DeviceNet
Use		All communication modules	Network link DeviceNet module
Reference	Screw terminals	STBXTS1120 (1)	STBXTS1111
	Spring terminals	STBXTS2120 (1)	STBXTS2111

(1) To be ordered separately, sold in lots of 10.

Connection accessories: See www.telemecanique.com

Power distribution modules ⁽¹⁾



Type of module			PDM				Auxiliary Power supply
Connection by removable terminals			Screw STBXTS1130 (2) Spring STBXTS2130 (2)				Screw STBXTS1120 (2) Spring STBXTS2120 (2)
Supply voltage			24 VDC		115...230 VAC		24 VDC
Maximum current	Inputs		4 A at 30°C, 2,5 A at 60°C	–	5 A at 30°C, 2,5 A at 60°C	–	–
	Outputs		8 A at 30°C, 5 A at 60°C	–	10 A at 30°C, 2,5 A at 60°C	–	–
	Inputs/Outputs		–	4 A at 30°C, 2,5 A at 60°C	–	5 A at 30°C, 2,5 A at 60°C	–
	Logique interne 5 V		–	–	–	–	1,2 A
Sensor/actuator bus voltage range			19.2...30 VDC		85...265 VAC		–
Dimensions (WxDxH)			18.4x70x128.3 mm				
Reference	Module	Standard	STBPDT3100	–	STBPDT2100	–	STBCPS2111
		Basic	–	STBPDT3105	–	STBPDT2105	
	Base		STBXBA2200		STBXBA2200		STBXBA2100

(1) Process power supplies see chapter 6 "Power supply"

(2) To be ordered separately, sold in lots of 10.

Bus extension modules for standard range



Type of module			"EOS" End of segment	"BOS" Beginning of segment	Extension for CANopen connection devices
Connection by removable terminals			–	Screw STBXTS1120 (2) Spring STBXTS2120 (2)	Screw STBXTS1110 (3) Spring STBXTS2110 (3)
Use			For placing at end of segment (except for the last)	For placing at head of each extension segment	For placing at end of last segment
Dimensions (WxDxH)			18.4x70x128.3 mm		
Reference	Module	Standard	STBXBE1000	STBXBE1200	STBXBE2100
	Base		STBXBA2400	STBXBA2300	STBXBA2000

(2) To be ordered separately, sold in lots of 10.

(3) To be ordered separately, sold in lots of 20.

Software and memory card



Type	Advantys configuration software	Removable memory card
Use	Single station	–
Memory size	–	32 Kb
Reference	STBSPU1000	STBXMP4440

Connection accessories

Type of accessory	Island bus extension cable				
Length	0.3 m	1 m	4.5 m	10 m	14 m
Reference	STBXCA1001	STBXCA1002	STBXCA1003	STBXCA1004	STBXCA1006

Connection accessories: See www.telemecanique.com

Advantys STB

IP20 Distributed I/O, modular system

Discrete modules



Type of module			Discrete inputs				
Connection by removable terminals (1)			Screw STBXTS1100 Spring STBXTS2100			Screw STBXTS1110 Spring STBXTS2110	
Number of channels			2	4	6	2	
Input voltage			24 VDC			115 VAC	230 VAC
Dimensions (WxDxH)			13.9x70x128.3 mm			18.4x70x128.3 mm	
Reference	Module	Standard	STBDDI3230	STBDDI3420	STBDDI3610	STBDAI5230	STBDAI7220
		Basic	–	STBDDI3425	STBDDI3615	–	–
	Base		STBXBA1000			STBXBA2000	

(1) To be ordered separately, sold in lots of 20.



Type of module			Discrete solid state outputs					
Connection by removable terminals (1)			Screw STBXTS1100 Spring STBXTS2100					
Number of channels			2	4	6			
Output voltage			24 VDC		24 VDC		24 VDC	
Output current			0.5 A	2 A	0.25 A	0.5 A	0.25 A	0.5 A
Dimensions (WxDxH)			13.9x70x128.3 mm					
Reference	Module	Standard	STBDDO3200	STBDDO3230	–	STBDDO3410	–	STBDDO3600
		Basic	–	–	STBDDO3415	–	STBDDO3605	–
	Base		STBXBA1000					

(1) To be ordered separately, sold in lots of 20.



Type of module			Discrete outputs		
			Triac		Relay
Connection by removable terminals (1)			Screw STBXTS1110 Spring STBXTS2110		
Number of channels			2	2 NC/NO	2 NC+NO
Output voltage			115...230 VAC		24 VDC or 115...230 VAC
Output current			2 A at 30°C, 1 A at 60°C		2 A per contact
Dimensions (WxDxH)			18.4x70x128.3 mm		28.1x70x128.3 mm
Reference	Module	Standard	STBDAO8210		STBDRA3290
	Base		STBXBA2000		STBXBA3000

(1) To be ordered separately, sold in lots of 20.



Analog modules



Type of module (3)			Analog inputs					
Connection by removable terminals			Screw STBXTS1100 (1) / Spring STBXTS2100 (1)					
Number of channels			2					
Input signal			- 10...+10 V		0...+10 V	0...20 mA	4...20 mA	Multi-range (2)
Resolution			11 bits + sign	9 bits + sign	10 bits	12 bits	10 bits	15 bits + sign
Dimensions (WxDxH)			13.9x70x128.3 mm					
Reference	Module	Standard	STBAVI1270	-	-	STBACI1230	-	STBART0200
		Basic	-	STBAVI1275	STBAVI1255	-	STBACI1225	-
	Base		STBXBA1000					

(1) To be ordered separately, sold in lots of 20.

(2) Thermocouple B, E, J, K, R, S, T. Thermal probe Pt 100, Pt 1000, Ni 100, Ni 1000, cu 10, ± 80 mV.



Type of module (3)			Analog outputs					
Connection by removable terminals			Screw STBXTS1100 (1) / Spring STBXTS2100 (1)					
Number of channels			2					
Output signal			- 0...+10 V, - 10...+10 V	0...+10 V	-10 V...+10 V	0...20 mA	4...20 mA	
Resolution			11 bits + sign or 12 bits	10 bits	9 bits + signe	12 bits	10 bits	
Dimensions (WxDxH)			13.9x70x128.3 mm					
Reference	Module	Standard	STBAVO1250	-	-	STBACO1210	-	
		Basic	-	STBAVO1255	STBAVO1265	-		STBACO1225
	Base		STBXBA1000					

(1) To be ordered separately, sold in lots of 20.

Application-specific modules



Type of module (3)			For motor starters		Counter (1)
			Tego Power	TeSys model U	
Connection by connector			1 HE10 (30 contacts)	4 RJ45	Spring STBXTS2150 (2)
Number of inputs/outputs			16 E / 8 S	12 E / 8 S	4 E / 2 S
Input voltage			24 VDC		24 VDC
Output voltage/current			24 VDC/0.1 A per channel		24 VDC/0.5 A
Number of channels			8 non reversing motor starters	4 starters-controllers	1 counter channel 40 kHz
Dimensions (WxDxH)			18.4x70x128.3 mm	28.1x70x128.3 mm	
Reference	Module	Standard	STBEPI1145	STBEPI2145	STBEHC3020
	Base		STBXBA2000	STBXBA3000	
	Connection cables		STBXCA3002 (L= 1 m)	490NTW00002 (L= 2 m)	-
			STBXCA3003 (L= 2 m)	490NTW00005 (L= 5 m)	-

(1) For 2/3-wire PNP/NPN 24 VDC sensors, 24 VDC incremental encoders, mechanical contacts

(2) To be ordered separately

(3) Required grounding kit (conseilled for counter<40 kHz): STBXSP3000 (connecting support) + STBXSP3010 (1,5...6 mm² terminals) + STBXSP3020 (5...11 mm² terminals)

Connection accessories: See www.telemecanique.com

Advantys FTM

IP67 distributed I/O, modular system

Interface modules



Type of bus module	CANopen machine bus	DeviceNet fieldbus	Profibus fieldbus
Max. number of Discrete I/O	256		
Max. number of splitter boxes	16		
Bus module supply voltage	24 V DC		
Bus module max. supply current	9 A		
Product certification	UL/CSA	CULus	
Dimensions (WxDxH)	50 x 50.3 x 151 mm		
References	FTM1CN10	FTM1DN10	FTM1DP10

Splitter boxes



Type of splitter box		Discrete inputs/outputs			
		Compact		Expandable	
Input voltage		24 V DC/type 2/200 mA		24 V DC/type 2/200 mA	
Output voltage		24 V DC		24 V DC	
Type of output		Solid-state		Solid-state	
Output current		0.5 A		0.5 A	
Maximum supply current by internal bus		4 A		4 A	
Diagnostics		Short-circuit on I/O, wire breakage fault, sensor/actuator fault			
Dimensions (WxDxH)		30 x 34.5 x 126 mm		30 x 34.5 x 151 mm	
I/O connection		M8 connector	M12 connector	M8 connector	M12 connector
References	8 inputs	FTM1DE08C08	FTM1DE08C12	FTM1DE08C08E	FTM1DE08C12E
	8 configurable inputs/outputs	FTM1DD08C08	FTM1DD08C12	FTM1DD08C08E	FTM1DD08C12E
	16 inputs	–	FTM1DE16C12 (1)	–	FTM1DE16C12E (1)
	16 configurable inputs/outputs	–	FTM1DD16C12 (1)	–	FTM1DD16C12E (1)

(1) Dimensions: 50 x 34.5 x 126 mm.

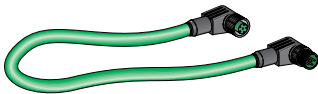


Type of splitter box		Analogue inputs/outputs			
		Compact			
Type of inputs/outputs		Current		Voltage	
Measuring range		0...20 mA/4...20 mA		± 10 V DC/0...10 V DC	
Diagnostics		Short-circuit on I/O, wire breakage fault, sensor/actuator fault			
Conversion time		≤ 2 ms per channel			
Dimensions (WxDxH)		30 x 34.5 x 126 mm			
Resolution		16 bit	12 bit	15 bit + sign	11 bit + sign
References	4 inputs	FTM1AE04C12C	–	FTM1AE04C12T	–
	4 outputs	–	FTM1AS04C12C	–	FTM1AS04C12T



Accessories for distributed I/O FTM ⁽¹⁾

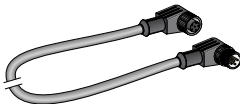
Internal bus connection cables



(1) For sensor/actuator cabling accessories, see page 7/13

Type of cable			For linking bus module and splitter boxes
Type of connector			Elbowed M12, 6-pin, at either end
References	Cable	L = 0.3 m	FTXCB3203
		L = 0.6 m	FTXCB3206
		L = 1 m	FTXCB3210
		L = 2 m	FTXCB3220
		L = 3 m	FTXCB3230
		L = 5 m	FTXCB3250

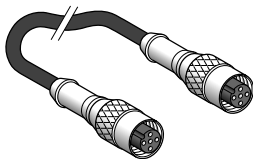
Auxiliary power supply connection cables



Type of cable			For connection of 24 V DC auxiliary power supply	
Type of connector			Elbowed M12, 6-pin, at either end	Elbowed M12, 6-pin, at one end (other end free)
References	Cable	L = 0.3 m	FTXCA3203	FTXCA3103
		L = 0.6 m	FTXCA3206	FTXCA3106
		L = 1 m	FTXCA3210	FTXCA3110
		L = 2 m	FTXCA3220	FTXCA3120
		L = 3 m	FTXCA3230	FTXCA3130
		L = 5 m	FTXCA3250	FTXCA3150

Accessories

Type		Line terminator for end of internal bus
Type of connector		M12
References		FTXCBTL12



(1) For sensor and actuator cabling accessories:
see page 7/17

Type of bus			CANopen machine bus	DeviceNet fieldbus	Profibus fieldbus	INTERBUS fieldbus
Type of female connector			M12, 5-pin, at either end			–
Connector coding			A encoded			B encoded
References	Cable	L = 0.3 m	FTXCN3203		FTXDP3203	–
		L = 0.6 m	FTXCN3206		FTXDP3206	FTXIB1206 (2)
		L = 1 m	FTXCN3210		FTXDP3210	FTXIB1210 (2)
		L = 2 m	FTXCN3220		FTXDP3220	FTXIB1220 (2)
		L = 3 m	FTXCN3230		FTXDP3230	–
		L = 5 m	FTXCN3250		FTXDP3250	FTXIB1250 (2)

(2) Reference includes the Bus connection cable + the power supply cable.

Power supply connection cables



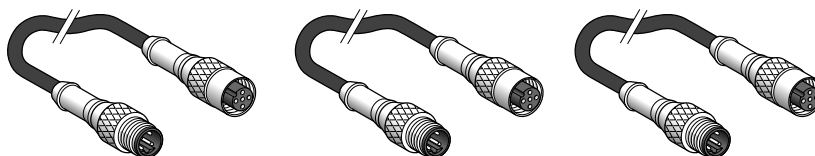
Type of bus			CANopen machine bus	DeviceNet fieldbus	Profibus fieldbus
Type of female connector			Type 7/8, 5-pin, at either end		
References	Cable	L = 0.6 m	FTXDP2206		
		L = 1 m	FTXDP2210		
		L = 2 m	FTXDP2220		
		L = 5 m	FTXDP2250		
Type of female connector			Type 7/8, 5-pin, at one end (other end free)		
References	Cable	L = 1.5 m	FTXDP2115		
		L = 3 m	FTXDP2130		
		L = 5 m	FTXDP2150		

Accessories

Type of bus		CANopen machine bus	DeviceNet fieldbus	Profibus fieldbus	INTERBUS fieldbus
References	Configuration CD-ROM	FTXES00			
	Diagnostics M12 adaptor	FTXDG12			
	Power supply T-connector	FTXCNCT1			–
	Line terminator	FTXCNTL12		FTXDPTL12	–

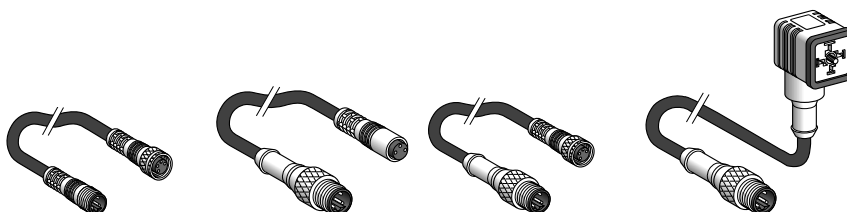
Accessories for sensors/actuators

M12 / M12 jumper cables



Type			Male / Female jumper cables		
Type of male connector, interface side			M12, 3-pin, straight, screw thread	M12, 4-pin, straight, screw thread	M12, 5-pin, straight, screw thread
Type of female connector, sensor side			M12, 3-pin, straight, screw thread	M12, 4-pin, straight, screw thread	M12, 5-pin, straight, screw thread
Cable			PUR, black	PUR, black	PUR, black
References	Cable	L = 1 m	XZCR1511040A1	XZCR1511041C1	XZCR1511064D1
		L = 2 m	XZCR1511040A2	XZCR1511041C2	XZCR1511064D2

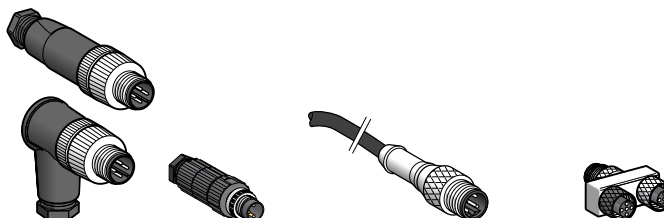
M8/M8, M8/M12 and M12/DIN jumper cables



Type			Male / Female jumper cables			
Type of male connector, interface side			M8, 3-pin straight, screw thread	M12, 3-pin straight, screw thread	M12, 3-pin straight, screw thread	M12, 3-pin straight, screw thread
Type of female connector, sensor side			M8, 3-pin straight, screw thread	M8, 3-pin straight, clip together	M8, 3-pin straight, screw thread	DIN 43650A elbowed, screw thread
Cable			PUR, black	PUR, black	PUR, black	PUR, black
References	Cable	L = 1 m	XZCR2705037R1	XZCR1501040G1	XZCR1509040H1	XZCR1523062K1
		L = 2 m	XZCR2705037R2	XZCR1501040G2	XZCR1509040H2	XZCR1523062K2

7

Pre-wired connectors and splitter box



Type			Connectors		Pre-wired connectors	Splitter box "Y"	
Type of male connector, interface side			M12, 4-pin	M8, 3-pin	M12, 5-pin, straight, screw thread	1 x M12	1 x M12
Type of female connector, sensor side			–	–	–	2 x M12	2 x M8
Cable			–	–	PUR, black	–	–
References	Straight connector, screw thread		XZCC12MDM40B	XZCC8MDM30V	–	FTXCY1212	FTXCY1208
	Elbowed connector, screw thread		XZCC12MCM40B	–	–	–	–
	Cable	L = 0.5 m	–	–	XZCP1564L05	–	–
		L = 2 m	–	–	XZCP1564L2	–	–

The **cabling system** that meets your needs for industrial automation systems

AS-Interface

With the «Smart Cable» opt for:



(Actuator Sensor Interface)

■ **Simplicity**

A quick and expandable cabling system:

- > Only 1 cable for connecting all the components of an automation system
- > Management of communications integrated in the products

■ **Maximum security**

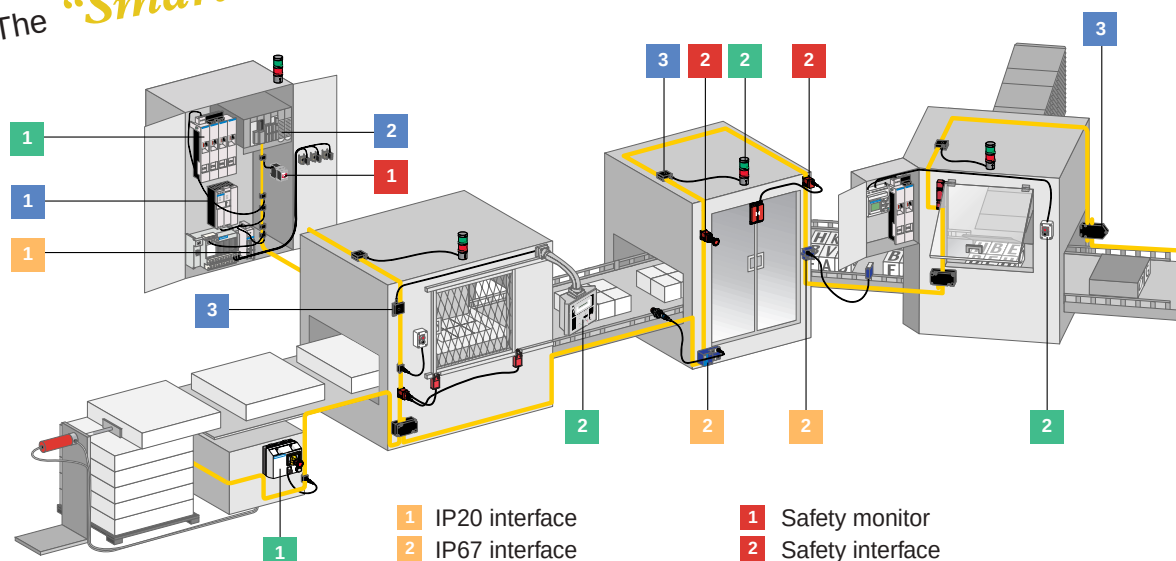
AS-Interface significantly improves the reliability, availability and safety of your machine:

- > Cabling errors are eliminated
- > Risk of electrical connection failure greatly reduced
- > High immunity to electromagnetic interference (EMC)
- > The machine's safety function is fully integrated with AS-Interface Safety at Work.

■ **Up to 40% savings in costs**

- > Savings in time for design, installation, setting-up and commissioning
- > Savings in space required in enclosures due to smaller products and elimination of intermediate boxes
- > Control cabling eliminated and reduction in cable ducting

The «Smart Cable»



- 1 IP20 interface
- 2 IP67 interface

- 1 Dedicated control components
- 2 Dedicated dialogue components

- 1 Safety monitor
- 2 Safety interface

- 1 Power supply units and earth fault detection
- 2 AS-Interface master
- 3

The essential guide

A simplified selection guide enabling you to quickly select all the necessary products and accessories to build your installation.

Contents

These IP20 or IP67 interfaces allow any standard automation component to be connected to the AS-Interface cable.

These handle automation functions and can be connected directly to the AS-Interface cable. An integrated circuit (ASIC) built into the products manages all interfacing functions and communication.

The incorporation of safety functions in the AS-Interface system is achieved by adding a safety monitor and safety interfaces, connected together with other standard AS-Interface components on the same yellow cable.

Sensors and actuators are connected to the processing unit by the AS-Interface system. This system comprises a cable, accessories, a master module and a power supply unit.

The terminals enable the assigning of an address to each interface and component in the system and diagnostics of the installation.

Advantys interfaces for generic products 8/2

■ IP20 interfaces

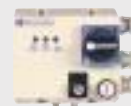


■ IP67 interfaces



Dedicated components 8/4

■ For control



■ For dialogue



Safety solutions

(see Chapter 9 "Machine safety")

■ Safety monitors



■ Safety interfaces



Installation system 8/6 to 8/8

■ Master modules, power supply units



■ Cables, repeaters

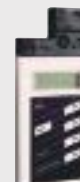


■ Accessories



Tools 8/9

■ Adjustment and addressing terminals



AS-Interface

Advantys interfaces for generic products

IP20 for mounting in enclosure



Modular interface, width 25 mm V2.1 with standard addressing	Analogue		Digital		
Number of inputs	2 (0...10V)	2 (0/4...20mA)	4	4	4 isolated
Number of outputs	—	—	4 relay, 2A	4 solid state, 0.5A	4 solid state, 0.5A
Type of addressing	Standard				
Supply by AS-Interface	Inputs and sensor supply (200 mA max.)				—
Supply by 24 VDC external source (black AUX cable)	—	—	—	Outputs	(2)
AS-Interface profile	S.7.3.F.D	S.7.3.F.D	S.7.0.F.E	S.7.0.F.E	S.7.0.F.E
Maximum consumption from AS-Interface (excluding sensor supply)	60 mA	60 mA	110 mA	50 mA	20 mA
Dimensions (WxDxH)	25x77x87 mm	25x77x87 mm	25x77x87 mm	25x77x87 mm	25x77x87 mm
References	ASI20MA2VU	ASI20MA2VI	ASI20MT4I4OR	ASI20MT4I4OS	ASI20MT4I4OSA
Accessory (1) for connection to flat cables	XZCG0122	XZCG0122	XZCG0122	ASIDCPFIL20	ASIDCPFIL20

(1) Or direct screw terminal connection (without accessory), (other accessories, see page 8/9).

(2) Inputs, outputs and sensor supply (200 mA max.).



Modular interface, width 25 mm V2.1 with extended (A/B) addressing	Digital				
Number of inputs	4	2	4	4	4 isolated
Number of outputs	—	1 triac, 2A	3 relay, 2A	3 solid state, 0.5A	3 solid state, 0.5A
Type of addressing	Extended (A/B)				
Supply by AS-Interface	Inputs and sensor supply (200 mA max.) (3)				—
Supply by 24 VDC external source (black AUX cable)	—	—	—	Outputs	(2)
AS-Interface profile	S.0.A.7.0	S.3.A.7.0	S.7.A.7.0	S.7.A.7.0	S.7.A.7.0
Maximum consumption from AS-Interface (excluding sensor supply)	50 mA	40 mA	90 mA	50 mA	20 mA
Dimensions (WxDxH)	25x77x87 mm	25x77x87 mm	25x77x87 mm	25x77x87 mm	25x77x87 mm
References	ASI20MT4IE	ASI20MT2I1OTE	ASI20MT4I3ORE	ASI20MT4I3OSE	ASI20MT4I3OSAE
Accessory (1) for connection to flat cables	XZCG0122	XZCG0122	XZCG0122	ASIDCPFIL20	ASIDCPFIL20

(1) Or direct screw terminal connection (without accessory), (other accessories, see page 8/9).

(2) Inputs, outputs and sensor supply (200 mA max.).

(3) Except ASI20MT4I3ORE (170 mA max.).

IP67 for mounting on machine



Interface			Digital					
V2.1 with extended (A/B) addressing								
Number of inputs			4	2	–	4	4	4
Input cabling			Standard (1 x M12 input)				"Y" (2 x M12 inputs)	
Number of outputs			–	2 solid-state, 2A	3 solid-state, 2A	3 solid-state, 2A	–	3 solid-state, 2A
Type of addressing			Extended (A/B)					
Supply by AS-Interface			Inputs and sensor supply (200 mA max. except ASI67FFP22•: 100 mA)					
Supply by 24 VDC external source (black AUX cable)			–	Outputs	–	Outputs	–	Outputs
AS-Interface profile			S.0.A.7.0	S.B.A.7.0	S.8.A.7.0	S.7.A.7.0	S.0.A.7.2	S.7.A.7.E
Maximum consumption from AS-Interface (excluding sensor supply)			45 mA	32 mA	18 mA	48 mA	45 mA	48 mA
Dimensions (WxDxH)			45x42x80 mm	45x42x80 mm	45x42x80 mm	60x30.5x151 mm	45x42x80 mm	60x30.5x151 mm
Connection	IDC	Interface	ASI67FFP40E	ASI67FFP22E	ASI67FFP03E	ASI67FFP43E	ASI67FFP40EY	ASI67FFP43EY
		Standard connection base	ASI67FFB01 (1)	ASI67FFB01 (1)	ASI67FFB01 (1)	ASI67FFB03	ASI67FFB01 (1)	ASI67FFB03
	M12 connector	Interface + Connection base	ASI67FMP40E	ASI67FMP22E	ASI67FMP03E	ASI67FMP43E	ASI67FMP40EY	ASI67FMP43EY

(1) A connection base with fixing centres that are compatible with the ASIB4VM12 connection base is available. Reference **ASI67FFB02**.



Interface			Digital				
V2.1 with standard addressing							
Number of inputs			4	2	–	4	4
Input cabling			Standard (1 x M12 input)				"Y" (2 x M12 inputs)
Number of outputs			–	2 solid-state, 2A	4 solid-state, 2A	4 solid-state, 2A	4 solid-state, 2A
Type of addressing			Standard				
Supply by AS-Interface			Inputs and sensor supply (200 mA max. except ASI67FFP22•: 100 mA)				
Supply by 24 VDC external source (black AUX cable)			–	Outputs	Outputs	Outputs	Outputs
AS-Interface profile			S.0.0.F.E	S.3.0.F.E	S.8.0.F.E	S.7.0.F.E	S.7.1.F.E
Maximum consumption from AS-Interface (excluding sensor supply)			45 mA	32 mA	19 mA	49 mA	49 mA
Dimensions (WxDxH)			45x42x80 mm	45x42x80 mm	45x42x80 mm	60x30.5x151 mm	60x30.5x151 mm
Connection	IDC	Interface	ASI67FFP40D	ASI67FFP22D	ASI67FFP04D	ASI67FFP44D	ASI67FFP44DY
		Standard connection base	ASI67FFB01 (1)	ASI67FFB01 (1)	ASI67FFB01 (1)	ASI67FFB03	ASI67FFB03
	M12 connector	Interface + Connection base	ASI67FMP40D	ASI67FMP22D	ASI67FMP04D	ASI67FMP44D	ASI67FMP44DY

(1) A connection base with fixing centres that are compatible with the ASIB4VM12 connection base is available. Reference **ASI67FFB02**.



Interface			Digital			
V2.1 (V1 compatible) with standard addressing						
Number of inputs			4	2	–	4
Input cabling			Standard (1 x M12 input)			
Number of outputs			–	2 solid-state, 2A	4 solid-state, 2A	4 solid-state, 2A
Type of addressing			Standard			
Supply by AS-Interface			Inputs and sensor supply (200 mA max. except ASI67FFP22•: 100 mA)			
Supply by 24 VDC external source (black AUX cable)			–	Outputs	Outputs	Outputs
AS-Interface profile			S.0.0.F.F	S.3.0.F.F	S.8.0.F.F	S.7.0.F.F
Maximum consumption from AS-Interface (excluding sensor supply)			45 mA	32 mA	19 mA	49 mA
Dimensions (WxDxH)			45x42x80 mm	45x42x80 mm	45x42x80 mm	60x30.5x151 mm
Connection	IDC	Interface	ASI67FFP40A	ASI67FFP22A	ASI67FFP04A	ASI67FFP44A
		Standard connection base	ASI67FFB01	ASI67FFB01	ASI67FFB01	ASI67FFB01

AS-Interface

Dedicated components

For control



Starter in insulated enclosure (1) V1	Control by		
	Black rotary knob (blue bkgnd.)	Pushbuttons	Red rotary knob (yellow bkgnd.)
Type of addressing	Standard	Standard	Standard
Supply by AS-Interface	Inputs, sensor supply (2)		Inputs, sensor supply
Supply by 24 VDC external source (black AUX cable)	(2)	(2)	Contactors
AS-Interface profile	S.7.D	S.7.D	S.7.F
Maximum consumption from AS-Interface	120 mA	120 mA	12 mA
Dimensions (WxDxH)	175x175x195 mm	175x175x195 mm	175x175x195 mm
References (3) (see table below)	Non reversing	LF1P●●D	LF7P●●D
	Reversing	LF2P●●D	LF8P●●D

Connection to AS-Interface and external supply (AUX) by accessory for flat cable: **ASIDCPM12D03** (AS-Interface and AUX cables) or **XZCG01205D** (AS-Interface cable).

(1) For an LF1 or LF2 starter in a metal enclosure, add the letter **M** after the 3rd digit in the references listed above (example: LF1P02D becomes **LF1MP02D**).

(2) Contactors supplied by AS-Interface or external source, configurable directly on terminal block.

(3) To complete the reference, replace ●● by the numbers indicated in the table below. (Example: LF1P●●D becomes LF1P00D).

kW	A	●●	kW	A	●●
–	without MCB	00	0.75	1.6...2.5	07
0.06	0.16...0.25	02	1.1 / 1.5	2.5...4	08
0.09	0.25...0.40	03	2.2	4...6.3	10
0.12 / 0.18	0.40...0.63	04	3 / 4	6...10	14
0.25	0.63...1	05	5.5	9...14	16
0.37/ 0.55	1...1.6	06			

kW= Motor power ratings in category AC-3, 400/415V, in kilowatts.

A= Adjustable range of circuit-breaker thermal trips, in amperes.

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Communication interface for	TeSys Model U V2.1	Tego Power V1
Type of addressing	Standard	Standard 2 addresses
Supply by AS-Interface	–	–
Supply by external source (AUX)	Coil	Contactors
AS-Interface profile	S.7.D.F.0	S.7.0
Maximum consumption from AS-Interface	30 mA280 mA	
Dimensions (WxDxH)	depending on LU model	35x129x254 mm
References	ASILUFC5	APP1CAS2
Recommended accessory for connection to AS-Interface cable (4)	ASIDCPFIL20	ASIDCPFIL20

(4) Or direct screw terminal connection to AS-Interface and external supply (AUX), (other accessories, see page 8/9).



For dialogue



Keypads and Control stations V1	Control stations with 2 pushbuttons	
	Black and white	Illuminated
Type of addressing	Standard	Standard
Supply by AS-Interface	Buttons	Buttons and pilot lights
Supply by external source (AUX)	–	–
AS-Interface profile	S.3.F	S.3.F
Consumption from AS-Interface	< 40 mA	< 80 mA
Dimensions (WxDxH)	68x62x128 mm	68x68x128 mm
References	XALS2001	XALS2003
Recommended accessory for connection to AS-Interface cable (4)	ASIDCPM12D03	ASIDCPM12D03

(4) Or direct screw terminal connection to AS-Interface and external supply (AUX), (other accessories, see page 8/9).



Interface V1	For 2 control units and 2 pilot lights
Number of pages available	–
Number of inputs	2
Number of outputs	2 solid state, 0.5A
Type of addressing	Standard
Supply by AS-Interface	Inputs and pilot lights
AS-Interface profile	S.3.F
Maximum consumption from AS-Interface	80 mA
Dimensions (WxDxH)	52x15x38 mm
References	XALSZ1

Direct screw terminal connection to AS-Interface or by accessory for flat cable: XZCG0122, (other accessories, see page 8/9).



Indicator banks, Ø 70 mm (7) V1	Base units and cover		Illuminated units		Audible unit
			"Flash" discharge tube	Steady light	
Type of addressing	Standard	Standard	–	–	–
Connection to AS-Interface cable and AUX (male M12 connector)	yes	yes, remote L=1m	–	–	–
Supply by AS-Interface	(5)	(5)	–	–	–
Supply by external source (AUX)	(5)	(5)	–	–	–
AS-Interface profile	S.8.F	S.8.F	–	–	–
Consumption from AS-Interface, supply by AS-Interface / external	250 / 30 mA	250 / 30 mA	–	–	–
Light source	–	–	5 Joule	LED	–
Buzzer	–	–	–	–	70...80 db at 1m
References	XVBC21A	XVBC21B	XVBC6B● (6)	XVBC2B● (6)	XVBC9B
Recommended accessory for connection to AS-Interface cable & AUX	ASIDCPM12D03	XZCG0120	–	–	–

(5) Illuminated units supplied by AS-Interface or externally, configurable by shunt.

(6) To complete the reference, replace the ● by the following number designating the colour: green: 3, red: 4, orange: 5, blue: 6, clear: 7, yellow: 8.

(7) To obtain a complete indicator bank, order a base unit + the illuminated or audible units (5 units maximum).

AS-Interface Installation system

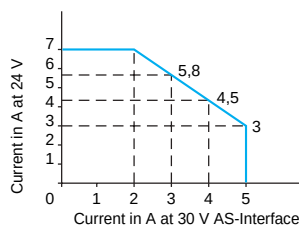
Master modules



Platform	Twido	Premium	Micro	Quantum
Maximum number of master modules per PLC	2	2, 4 or 8 depending on processor	1	8 (1)
Compatibility with AS-Interface interfaces and components	V1 / V2.1	V1 / V2.1	V1	V1
Direct connection to AS-Interface cable	by terminal block	by terminal block	by terminal block	by terminal block
Maximum number of addresses	62	62	31	31
Type of addressing	Standard/Extended (A/B)	Standard/Extended (A/B)	Standard	Standard
Compatibility with analogue interfaces	Yes	Yes	–	–
Compatibility with safety interfaces	Yes	Yes	Yes	Yes
AS-Interface profile	M.3	M.2.E	M.2	M.2
References	TWDNOI10M3	TSXSAY1000	TSXSAZ10	140EIA92100

(1) 4 per local rack, 4 per remote I/O, 2 per distributed I/O.

Power supply units



Type of supply	AS-Interface		AS-Interface + Auxiliary	
Input voltage	100...240 VAC	100...240 VAC	100...240 VAC	100...120 & 200...240 VAC
AS-Interface output voltage	30 VDC	30 VDC	30 VDC	30 VDC
Auxiliary output voltage	–	–	24 VDC	24 VDC
AS-Interface nominal power	73 W	146 W	73 W	61-153 W
Auxiliary nominal power	–	–	72 W	72-168 W
AS-Interface nominal current	2.4 A	4.8 A	2.4 A	5 A (2)
AUX nominal current	–	–	3 A	7 A (2)
Direct connection to AS-Interface cable	by terminal block	by terminal block	by terminal block	by terminal block
Dimensions (WxDxH)	54x120x120 mm	81x120x120 mm	81x120x120 mm	225x135x151.5 mm
References	without earth fault detection	ASIABLB3002	ASIABLB3004	ASIABLM3024
	with earth fault detection	ASIABLD3002	ASIABLD3004	–

(2) Power supply unit with constant maximum output, see curve above.

Cables and repeater



Type	Yellow AS-Interface cable	Black Auxiliary cable	Repeater (4)
Wire c.s.a.	2 x 1.5 mm ²	2 x 1.5 mm ²	–
References	Cable L = 20 m	XZCB10201 (3)	XZCB10202 (3)
	L = 50 m	XZCB10501 (3)	XZCB10502 (3)
	L = 100 m	XZCB11001 (3)	XZCB11002 (3)
Reference of repeater	–	–	ASIRPT01

(3) Standard cable. For TPE cable (oil and vapour resistant) add the letter **H** to the end of the reference, example: XZCB10201 becomes **XZCB10201H**.

(4) Enables an AS-Interface network to be extended by 100 m. Direct connection to the AS-Interface yellow cable by IDC.

Tap-offs for flat cable

(For connecting interfaces and components)



Connection to cable by IDC	AS-Interface IP54	AS-Interface + Auxiliary IP67
Cable extremity	M12 connector (5)	Bared wires (6)
References	Cable L = 0.3 m	–
	L = 0.6 m	XZCG01205D
	L = 1 m	XZCG01211D
	L = 2 m	–
	L = 5 m	–

(5) Female 5-pin M12 end connector, screw threaded for connection with M12 male connector.

(6) 2 x 0.34 mm² for product with terminal block.

(7) 4 x 0.34 mm² for product with terminal block.



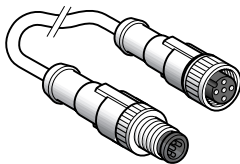
Connection to cable by IDC	AS-Interface	2 AS-Interface or 2 Auxiliary
Tap-off	1 x M12 connector 5-pin female, screw threaded	1 flat cable
References	Tap-off	XZCG0120
	IDC connection base	–
	Cover	XZSDP (8)

(8) For the complete product, include the connection base.

AS-Interface

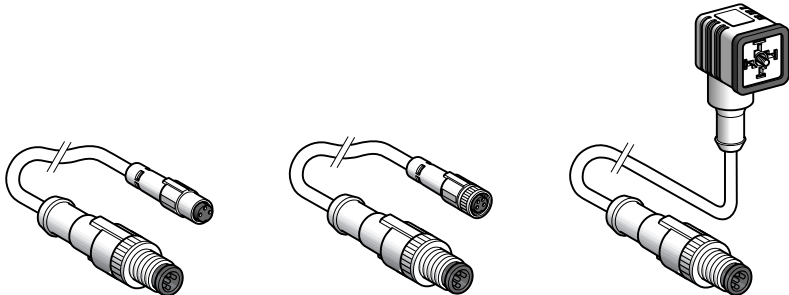
Installation system

Jumper cables M12 / M12



Type		Male / Female jumper cable		
Male connector type, interface side		M12, 3-pin, straight, screw thread.	M12, 4-pin, straight, screw thread.	M12, 5-pin, straight, screw thread.
Female connector type, sensor side		M12, 3-pin, straight, screw thread.	M12, 4-pin, straight, screw thread.	M12, 5-pin, straight, screw thread.
Cable		PUR, black	PUR, black	PUR, black
References	Cable L = 1 m	XZCR1511040A1	XZCR1511041C1	XZCR1511064D1
	L = 2 m	XZCR1511040A2	XZCR1511041C2	XZCR1511064D2

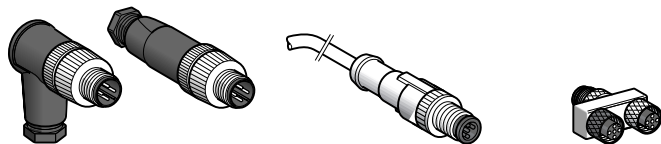
Jumper cables M12 / M8 or DIN



Type		Male / Female jumper cable		
Male connector type, interface side		M12, 3-pin, straight, screw thread.	M12, 3-pin, straight, screw thread.	M12, 3-pin, straight, screw thread.
Female connector type, sensor side		M8, 3-pin, straight (1)	M8, 3-pin, straight, screw thread.	DIN 43650A, elbowed, screw thrd.
Cable		PUR, black	PUR, black	PUR, black
References	Cable L = 1 m	XZCR1501040G1	XZCR1509040H1	XZCR1523062K1
	L = 2 m	XZCR1501040G2	XZCR1509040H2	XZCR1523062K2

(1) Clip together connector.

Connectors, splitter box



Type		Connectors	Pre-wired connectors	Splitter box
Male connector type, interface side		M12, 4-pin	M12, 5-pin, straight, screw thread.	1 x M12, 5-pin, straight, screw thrd.
Female connector type, sensor side		–	–	2 x M12, 5-pin, straight, screw thrd.
Cable		–	PUR, black	–
References	Straight connector, screw thread.	XZCC12MDM40B	–	FTXCY1212
	Elbowed connector, screw thread.	XZCC12MCM40B	–	–
	Cable L = 0.5 m	–	XZCP1564L05	–
	Cable L = 2 m	–	XZCP1564L2	–



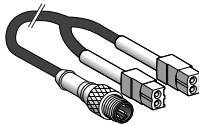
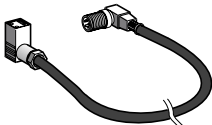
Tools

Adjustment and addressing terminals

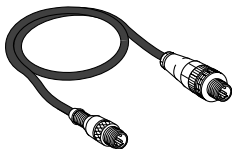


Display	25 mm LCD screen	13 mm LCD screen
Degree of protection	IP40	IP20
AS-Interface voltage / current measurement	yes	no
Addresses stored in memory	yes	no
Access to functions	direct by selector switch	by pull-down menu
Compatibility	V1/V2	V1/V2
Operating time	2500 addressing operations	250 read/write operations
References	ASITERV2	XZMC11
Reference with set of 7 leads + protective cover for terminal	ASITERV2SET	-

Addressing accessories for terminals ASITERV2 and XZMC11



Product connection	Infrared addressing	Socket
For products	ASISL...	ABE8... / APP1 / ASILUF... / XBZS43 / ASI20M
References	ASITERIR1	XZMG12



Product connection	M12, male	M12, female	Jack plug
For products	(2)	ASI67FMP XVB... / XAL... / LF...	ASI20M... / ASI67FFP...
References	ASITERACC1M	ASITERACC1F	ASITERACC

(2) Possibility to connect AS-Interface cable using T connector XZCG0120.

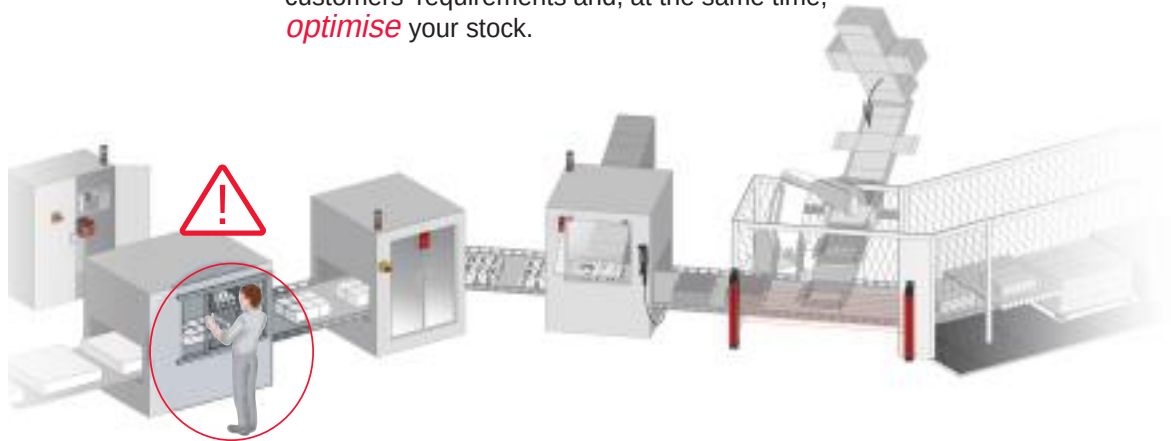
Safety solutions using Preventa for better protection

Preventa

Ingenious and innovative, Preventa safety solutions provide maximum protection for all the safety functions of your automation system.

Select Preventa:

- To export your machines to any location in the world, you expect solutions that are both *approved* and *conform* to international standards.
- To maintain productivity, you need solutions *quickly* to assist you, irrespective of the circumstances.
- You seek *universal* solutions to respond to the diversity of your customers' requirements and, at the same time, *optimise* your stock.



Level of Risk

The level of the respective risk (see also EN1050) determines the requirements and the category of EN954-1 to be met by the selected safety solution for the control system.

S	Result of an accident
S1	Slight injury
S2	Serious, irreversible, injury or death of a person
F	Frequency and duration in the danger zone
F1	Seldom to quite often and/or exposure time is short
F2	Frequent to continuous and/or exposure time is long
P	Possibility of avoiding the hazard
P1	Possible in certain circumstances
P2	Virtually impossible

		Category				
		B	1	2	3	4
●	S1	•	●	○	○	○
	F1	•	●	●	○	○
	P1		•	•	●	○
	P2		•	•	•	●

Table shown in annex of the standard **EN 954-1**

- Preferred control system category
- Measures which may exceed minimum requirements for the relevant risk
- Possible categories which require additional measures

The essential guide

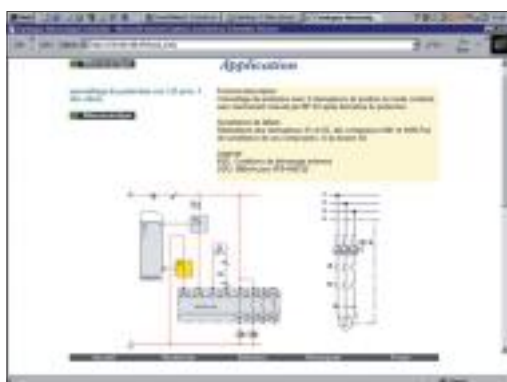
A simplified selection guide showing a selection of Preventa solutions covering the main safety applications likely to be encountered throughout the world.

Contents

You have defined your control system category

The schematic library designed by Schneider Electric assists you in selecting your optimal solution, by:

- providing typical schematics for the various safety functions,
- enabling selection and integration of the schematic in Autocad format.



- Establishment of the ordering references by direct access to the electronic catalogue.

Symbol	Reference
S1	ZB4 BS844
S2	AND ZB4 BZ104
S3	ZB4 BA4
S4	AND ZB4 BZ104
S5	ZB4 BA1
Module	AND ZB4 BZ101
KM1	XCS-M3910L•
KM2	XCS-M3910L•
	XPS-MP11123
	LC1
	LC1



Automation 9/2 to 9/7

- Safety PLCs
- Safety controllers and modules

AS-Interface Safety at work 9/8 and 9/9

- Safety monitors and interfaces

Detection 9/10 to 9/13

- Safety switches
- Safety limit switches and mats
- Safety light curtains

Operator dialogue 9/14 to 9/18

- Emergency stops
- Foot switches
- Two-hand control and enabling switches
- Products for explosive atmospheres
(see chapter 10 "Explosive Atmospheres")

Motor control 9/19 to 9/21

- Switch disconnectors
- TeSys motor starters



Available 1st quarter 2006



Safety PLC type		Compact				
Number of inputs	Digital	20	20	24	24	24
	Analogue	–	–	8	8	8
	Counting	–	–	2	2	2
Number of outputs	Digital	8	8	8	8	8
	Analogue	–	–	–	–	–
	Relay	–	–	–	–	–
Memory capacity	Application	250 Kb				
	Data	250 Kb				
Supply		External 24 VDC supply (with separate protection conforming to IEC 61131-2)				
Communication	On Ethernet network (Modbus TCP/IP)	Integrated (4xRJ45)	Integrated (4xRJ45)	Integrated (4xRJ45)	Integrated (4xRJ45)	Integrated (4xRJ45)
	On Modbus bus (Serial link)	Integrated (SUB-D9)	–	–	Integrated (SUB-D9)	–
	On Profibus DP bus	–	–	–	–	Integrated (SUB-D9)
Input/output connections		Removable screw terminal blocks, coded with locating device				
References (1) (2)		XPSMF3022	XPSMF31222	XPSMF3502	XPSMF3522	XPSMF3542

(1) Programming software **SSV1XPSMFWIN** to be ordered separately.

(2) Products referenced **XPSMF30/MF31/MF35** are marked **Himatrix F30, F31 and F35**.

Decentralised safety I/O modules



Module type		Inputs/Outputs Digital			
Number of inputs	Digital	16	8	16	20
	Analogue	–	–	–	–
Number of outputs	Digital	–	8	8	8
	Pulsed	4	4	2	–
Supply		External 24 VDC supply (with separate protection conforming to IEC 61131-2)			
Communication		On Safe Ethernet network (Modbus TCP/IP) Integrated (2xRJ45)			
Input/output connections		Removable screw terminal blocks, coded with locating device			
References (1) (3)		XPSMF1DIO1601	XPSMF3DIO8801	XPSMF3DIO16801	XPSMF3DIO20802



I/O module type		Inputs/Outputs Analogue	Outputs Digital		Relay
Number of inputs	Analogue	8	–	–	–
	Digital	–	4	16	–
Number of outputs	Analogue (not safety)	4	–	–	–
	Relay	–	–	–	8
Supply		External 24 VDC supply (with separate protection conforming to IEC 61131-2)			
Communication		On Safe Ethernet network (Modbus TCP/IP) Integrated (2xRJ45)			
Input/output connections		Removable screw terminal blocks, coded with locating device			
References (1) (3)		XPSMF3AIO8401	XPSMF2DO401	XPSMF2DO1601	XPSMF2DO801
					XPSMF2DO1602

(1) Programming software **SSV1XPSMFWIN** to be ordered separately.

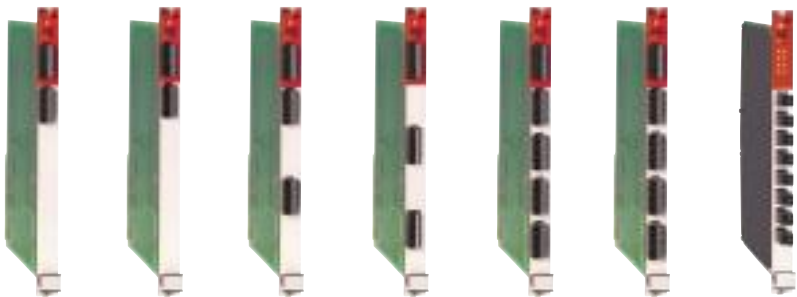
(3) Products referenced **XPSMF1/MF2/MF3** are marked **Himatrix F1, F2 and F3**.

Modular

Available 1st quarter 2006



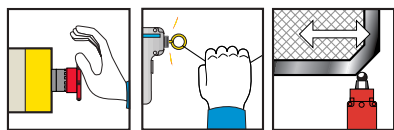
Type		CPU	Power supply module	Rack with 6 slots
Memory capacity	Application	500 Kb	–	–
	Data	500 Kb	–	–
Supply		–	External 24 VDC, integrated	–
Communication	On Ethernet network (Modbus TCP/IP)	Integrated (4xRJ45)	–	–
	On Modbus bus (Serial link)	Integrated (SUB-D9)	–	–
Power connections		Screw terminal blocks	Screw terminal blocks	–
Dimensions W x D x H		–	–	257 x 239 x 310 mm
References (1)		XPSMFPCU22	XPSMFPS01	XPSMFGEH01



I/O module type		For modular safety PLC						
		Analogue		Digital			Relay	
Number of inputs	Digital	–	–	–	24	32	24	–
	Analogue	8	–	–	–	–	–	–
	Counting	–	–	2	–	–	–	–
Number of outputs	Digital	–	–	4	–	–	16	–
	Analogue	–	8	–	–	–	–	–
	Relay	–	–	–	–	–	–	8
Supply		Removable screw terminal blocks, coded with locating device						
References (1)		XPSMFAI801	XPSMFAO801	XPSMFCIO2401	XPSMFDI2401	XPSMFDI3201	XPSMFDIO241601	XPSMFDOR801

(1) Programming software **SSV1XPSMFWIN** to be ordered separately.

Safety controllers for monitoring emergency stops and limit switches



Universal

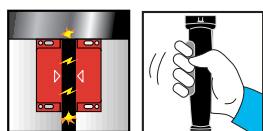


Maximum category of the solution (EN 954-1)		Category 4			
Number of circuits	Safety	2 x 2N/O + 6 solid-state		2 x 3N/O per function	
	Additional	–		3 solid-state	
Display (number of LEDs)		30		12	
Width of housing		74 mm		45 mm	
Communication interface		Modbus	Modbus, CANopen	Modbus, Profibus DP	–

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

Supply voltage	24 VDC	XPSMC32Z (1) (2) ▲	XPSMC32ZC (1) (2) ▲	XPSMC32ZP (1) (2) ▲	XPSMP11123P (3)
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coded magnetic switches enabling switch



Universal



Maximum category of the solution (EN 954-1)		Category 4			
For monitoring		magnetic switches and enabling switch			
Number of circuits	Safety	2 x 2N/O + 6 solid-state		2 x 3N/O per function	
	Additional	–		3 solid-state	
Display (number of LEDs)		30		12	
Width of housing		74 mm		45 mm	
Communication interface		Modbus	Modbus, CANopen	Modbus, Profibus DP	–

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

Supply voltage	24 VDC	XPSMC32Z (1)(2) ▲	XPSMC32ZC (1)(2) ▲	XPSMC32ZP (1)(2) ▲	XPSMP11123P (3)
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safety mats and edging



Universal



Maximum category of the solution (EN 954-1)		Category 3			
Number of circuits	Safety	2 x 2N/O + 6 solid-state		2 x 3N/O per function	
	Additional	–		3 solid-state	
Display (number of LEDs)		30		12	
Width of housing		74 mm		45 mm	
Communication interface		Modbus	Modbus, CANopen	Modbus, Profibus DP	–

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

Supply voltage	24 VDC	XPSMC32Z (1)(2) ▲	XPSMC32ZC (1)(2) ▲	XPSMC32ZP (1)(2) ▲	XPSMP11123P (3)
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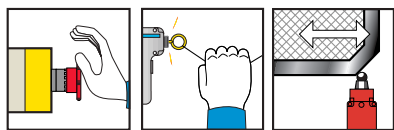
(1) Version with 32 inputs. For version with 16 inputs, replace 32 in the reference by 16 (example: XPSMC32Z becomes XPSMC16Z).

(2) Configuration software XPSMCWIN, connecting cable, adaptor and set of screw terminal plug-in connectors XPSMCTS16 and XPSMCTS32 or set of spring clip terminal plug-in connectors XPSMCTC16 and XPSMCTC32 to be ordered separately.

(3) For fixed connector version, delete the letter P from the end of the reference (example: XPSMP11123P becomes XPSMP11123).

Safety modules for monitoring emergency stops and limit switches

Available 2nd quarter 2006



Maximum category of the solution (EN 954-1)		Category 3	Category 4				
Number of circuits	Safety	3N/O	3N/O	3N/O	7N/O	3N/O+3N/O time del.	2N/O+3N/O time del.
	Additional	1 solid-state	–	1N/C + 4 solid-state	2N/C + 4 solid-state	3 solid-state	4 solid-state
Display (number of LEDs)		2	3	4	4	11	4
Width of housing		22.5 mm	22.5 mm	45 mm	90 mm	45 mm	45 mm

Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage (1)	24 VDC	–	–	–	–	XPSAV11113P	–
	24 VAC/DC	XPSAC5121P	XPSAF5130P	XPSAK311144P	XPSAR311144P	–	XPSATE5110P ▲
	230 VAC	–	–	–	–	–	XPSATE3710P ▲

(1) For version with non removable terminal block, delete the letter P from the end of the reference (example: XPSAV11113P becomes XPSAV11113).

coded magnetic switches enabling switch



Maximum category of the solution (EN 954-1)		Category 4		
For monitoring		2 coded magnetic switches maximum	6 coded magnetic switches maximum	enabling switch
Number of circuits	Safety	2N/O	2N/O	2N/O
	Additional	2 solid-state	2 solid-state	2 solid-state
Display (number of LEDs)		3	15	3
Width of housing		22.5 mm	45 mm	22.5 mm

Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage	24 VDC	XPSDMB1132P (1)	XPSDME1132P (1)	XPSVC1132P (1)
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(1) For version with non removable terminal block, delete the letter P from the end of the reference (example: XPSDMB1132P becomes XPSDMB1132).

safety mats and edging



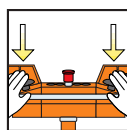
Maximum category of the solution (EN 954-1)		Category 3
Number of circuits	Safety	3N/O
	Additional	1N/C + 4 solid-state
Display (number of LEDs)		4
Width of housing		45 mm

Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage	24 VAC/DC	XPSAK311144P (1)
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(1) For version with non removable terminal block, delete the letter P from the end of the reference (example: XPSAK311144P becomes XPSAK311144).

Available 1st quarter 2006



Universal

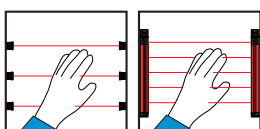


Maximum category of the solution (EN 954-1)		Category 4		
Number of circuits	Safety	2 x 2N/O + 6 solid-state		
	Additional	—		
Display (number of LEDs)		30		
Width of housing		74 mm		
Communication interface		Modbus	Modbus, CANopen	Modbus, Profibus DP

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

Supply voltage	24 VDC	XPSMC32Z (1)(2) ▲	XPSMC32ZC (1)(2) ▲	XPSMC32ZP (1)(2) ▲
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light curtains



Universal



Maximum category of the solution (EN 954-1)		Category 4			2 light curtains monitoring max.
Number of circuits	Safety	2 x 2N/O + 6 solid-state			6 PNP solid-state
	Additional	—			1 PNP + 1 NPN
Display (number of LEDs)		30			14 + double display units
Width of housing		74 mm			100 mm
Integral Muting function		Yes			Yes
Communication interface		Modbus	Modbus, CANopen	Modbus, Profibus DP	

Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

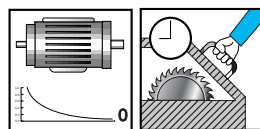
Supply voltage	24 VDC	XPSMC32Z (1)(2) ▲	XPSMC32ZC (1)(2) ▲	XPSMC32ZP (1)(2) ▲	XPSMP11123P (3)	XPSLCM1150 (4)
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(1) Version with 32 inputs, for version with 16 inputs, replace 32 in the reference by 16 (example: XPSMC32Z becomes XPSMC16Z).

(3) For version with non removable terminal block, delete the letter P from the end of the reference (example: XPSMP11123P becomes XPSMP11123).

(4) Removable terminal blocks

zero speed, time delay



Universal



Maximum category of the solution (EN 954-1)		Category 4		
For monitoring		Motor zero speed condition		
Number of circuits	Safety	2 x 2N/O + 6 solid-state		
	Additional	—		
Display (number of LEDs)		30		
Width of housing		74 mm		
Communication interface		Modbus	Modbus, CANopen	Modbus, Profibus DP

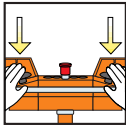
Universal solutions: safety controllers (for monitoring several safety functions simultaneously)

Supply voltage	24 VDC	XPSMC32Z (5) (2) ▲	XPSMC32ZC (5) (2) ▲	XPSMC32ZP (5) (2) ▲
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(5) Plug-in connector version only.

(2) Configuration software XPSMCWIN, connecting cable, adaptor and set of screw terminal plug-in connectors XPSMCTS16 and XPSMCTS32 or set of spring clip terminal plug-in connectors XPSMCTC16 and XPSMCTC32 to be ordered separately.

Safety modules for monitoring two-hand control



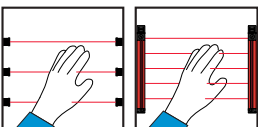
Maximum category of the solution (EN 954-1)		Category 1 (type IIIA to EN 574)	Category 4 (type IIIC to EN 574)	
Number of circuits	Safety	1N/O	2N/O	2N/O
	Additional	1N/C	1N/C	2 solid-state
Display (number of LEDs)		2	3	3
Width of housing		22.5 mm	45 mm	22.5 mm

Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage	24 VDC	–	XPSBC1110	XPSBF1132P (1)
	24 VAC/DC	XPSBA5120	–	–

(1) For version with non removable terminal block, delete the letter P from the end of the reference (example: XPSBF1132P becomes XPSBF1132).

light curtains



Maximum category of the solution (EN 954-1)		Category 2	Category 4			
Number of circuits	Safety	2N/O	3N/O	3N/O	7N/O	3N/O (2)
	Additional	4 solid-state	–	1N/C + 4 solid-state	1N/C + 4 solid-state	2 solid-state
Display (number of LEDs)		4	3	4	4	5
Width of housing		45 mm	22.5 mm	45 mm	90 mm	90 mm
Integral Muting function		Yes	No	No	No	Yes

Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage	24 VDC	XPSCM1144P (1)	–	–	–	XPSLMR1152 (3)
	24 VAC/DC	–	XPSAFL5130P (1)	XPSAK311144P (1)	XPSAR311144P (1)	–

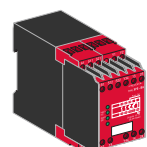
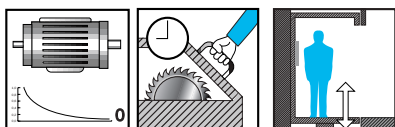
(1) For version with non removable terminal block, delete the letter P from the end of the reference (example: XPSCM1144P becomes XPSCM1144).

(2) Version with 3 solid-state outputs instead of 3N/O: XPSLMS1150.

(3) Removable terminal block version only.

zero speed, time delay and lifts

Available 2nd quarter 2006



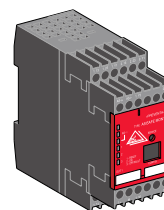
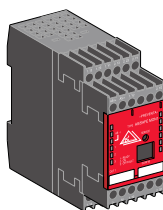
Maximum category of the solution (EN 954-1)		Category 3		Category 4
For monitoring		Motor zero speed condition	Safety time delay	Lifts
Number of circuits	Safety	1N/O + 1N/C	1N/O time delay	1N/O pulse
	Additional	2 solid-state	2N/C + 2 solid-state	2N/C + 2 solid-state
Display (number of LEDs)		4	4	4
Width of housing		45 mm	45 mm	45 mm

Optimum solutions: safety modules (for monitoring 1 safety function)

Supply voltage	24 VDC	XPSVNE1142P (1) ▲	–	–	–
	24 VAC/DC	–	XPSTSA5142P (2)	XPSTSW5142P (2)	XPSDA5142

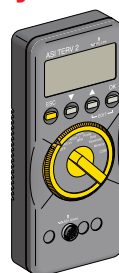
(1) Motor frequency ≤ 60 Hz.. For frequencies ≥ 60 Hz, please refer to the "Safety solution" catalogue.

(2) Removable terminal block version only.



Maximum category of the solution (EN 954-1)		Category 4	
Number of circuits	Safety	2N/O	2 x 2N/O
	Auxiliary	1 solid-state	2 solid-state
Display (number of LEDs)		5	8
Width of housing		45 mm	45 mm
AS-Interface profile		S.7.F	S.7.F
Master module compatibility		V1 / V2.1	V1 / V2.1
References of monitor with	enhanced functions	ASISAFEMON1B	ASISAFEMON2B
	standard functions	ASISAFEMON1	ASISAFEMON2

Configuration software, adjustment terminal and AS-Interface analyser

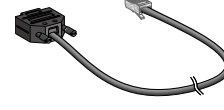
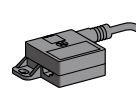


Type	"Safety Suite" configuration software (1)	Adjustment terminal (2)	AS-Interface Analyser
Multilingual	EN / FR / DE / ES / IT / PT	—	■ Analysis and diagnostics of AS-Interface line and Safety at Work
For use with	ASISAFEMON1/2, ASISAFEMON1B/2B	—	■ Complements the diagnostic functions of the local AS-Interface master
Media	CD-ROM PC	—	■ Maintenance or validation of AS-Interface lines
Environment	Windows	—	■ Print-out of AS-Interface line tests
Degree of protection	—	IP 20	
Supply	—	4 x LR6 batteries	
Dimensions W x D x H	—	70 x 50 x 170 mm	92 x 28 x 139 mm
References	ASISWIN2	ASITERV2	ASISA01

(1) CD-ROM with hardware and software user guides.

(2) For addressing safety interfaces, use the infrared adaptor ASITERIR1 or the standard adaptor ASISAD1.

Accessories



Type	Adaptor for the addressing of safety interfaces	Infrared adaptor for adjustment terminal	Tap-off for AS-Interface cable	Cable for monitor parametering, RS 232	Cable for monitor to monitor transfer
Degree of protection	IP 67	IP 67	IP 67	IP 20	IP 20
Cable length	—	1 m	2 m	2 m	0.2 m
References	ASISAD1 ▲	ASITERIR1	XZCG0122	ASISCP	ASISCM

▲ Available 2nd quarter 2006

Safety interfaces

For Ø 22 Emergency stop

Available 2nd quarter 2006



Interface type	For mushroom head pushbuttons				Control stations	
	Metal	(1)	Plastic	(1)	Plastic	
Degree of protection	IP 20	IP 20	IP 20	IP 20	IP 65	IP 65
Dimensions W x D x H (mm)	40 x 90 x 68	40 x 80 x 40	40 x 90 x 64	40 x 90 x 40	66 x 95 x 78	66 x 95 x 78
AS-Interface profile	S.O.B.F.F	S.O.B.F.F	S.O.B.F.F	S.O.B.F.F	S.O.B.F.F	S.O.B.F.F
Consumption from AS-Interface	45 mA	45 mA	45 mA	45 mA	45 mA	45 mA
Infrared addressing	Yes	No	Yes	No	No	No
Connection on AS-Interface	IDC (2)	Connector	IDC (2)	Connector	M12 connector	M12 connector
Reference with N/C + N/C contact (head not included)	ASISSLB4	ASISLE4 ▲	ASISSLB5	ASISLE5 ▲	ASISEA1C ▲	ASISEK1C ▲
Reference of head (Ø40 latching mushroom head, turn to release)	ZB4BS844 (3)	ZB4BS844 (3)	ZB4AS844 (3)	ZB4AS844 (3)	Integrated (4)	Integrated (5)

(1) For installation in enclosures.

(2) IDC: Insulation Displacement Connector.

(3) Head to be ordered separately. For other heads, please refer to www.telemecanique.com.

(4) Turn to release latching mushroom head.

(5) Key release (n° 455) latching mushroom head.

For other safety products with M12 connector outputs or ISO M16/20

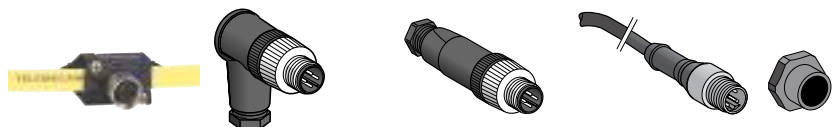


Type of entry	2 x M12 entries (5)	1 x M12 entry	1 x ISO M16 entry (6)
Degree of protection	IP 67	IP 67	IP 67
Dimensions W x D x H	40 x 40 x 58 mm	40 x 40 x 58 mm	40 x 40 x 57.5 mm
AS-Interface profile	S.O.B.F.F	S.O.B.F.F	S.O.B.F.F
Consumption from AS-Interface	45 mA	45 mA	45 mA
Infrared addressing	Yes	Yes	Yes
Connection on AS-Interface	IDC (1)	IDC (1)	IDC (1)
References	ASISSLC2	ASISSLC1	ASISLLS

(5) For connection using 2 pre-wired connectors, or 1 pre-wired connector + 1 connector.

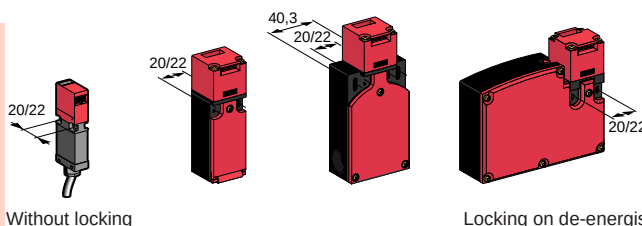
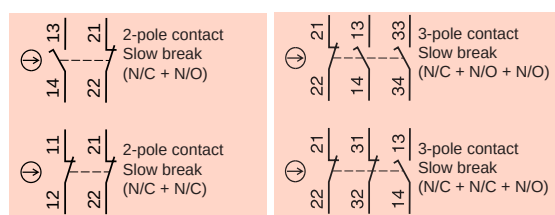
(6) For 1 x ISO M20 entry, use adaptor shown below.

Accessories



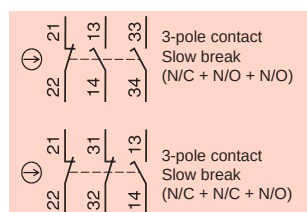
Type	Tap-off for AS-Interface cable	Connectors		Pre-wired connector	Adaptor (sold in lots of 5)
Description	M12 female, threaded	elbowed	straight	straight	ISO M16/M20
Degree of protection	IP 67	IP 67	IP 67	IP 67	IP 67
Length of cable	—	—	—	2 m	—
References	XZCG0120	XZCC12MCM40B	XZCC12MDM40B	XZCP1541L2	DE9RI2016

ISO entry
(to EN 50262)

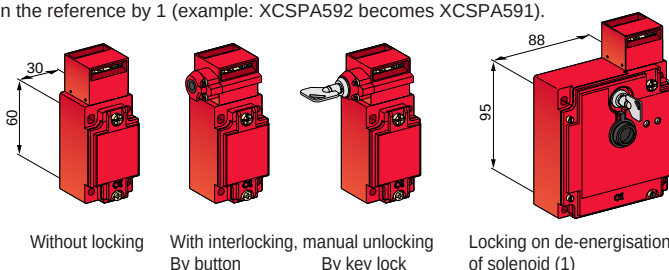


Plastic, double insulated switches	Type XCSMP pre-cabled, L = 2 m	Type XCSPA and TA 1xISO M16 entry. (2) 2xISO M16 entries. (2)	Type XCSTE 1 x ISO M16 cable entry (2)
Actuation speed (min → max)	0.05 m/s → 1.5 m/s	0.1 m/s → 0.5 m/s	0.1 m/s → 0.5 m/s
Degree of protection	IP 67	IP 67	IP 67
Rated operational characteristics (conforming to IEC/EN 60947-5-1)	AC 15, C 300 DC 13, Q 300	AC 15, A 300 DC 13, Q 300	AC 15, B 300 DC 13, Q 300
Dimensions (body + head) W x D x H	30 x 15 x 87 mm	30 x 30 x 93.5 mm	110 x 33 x 93.5 mm
Solenoid supply voltage	—	—	24 VAC/DC 120 VAC/DC 230 VAC/DC
Complete switch N/C+N/O stag. (XCSMP/PA/TE) N/C+N/O+N/O (XCSTA)	XCSMP59L2 (3) →	XCSPA592 → XCSTA592 →	XCSTE5312 → XCSTE5332 → XCSTE5342 →
N/C+N/C (XCSMP/PA/TE) N/C+N/C+N/O (XCSTA)	XCSMP79L2 (3) →	XCSPA792 → XCSTA792 →	XCSTE7312 → XCSTE7332 → XCSTE7342 →

- (1) For locking on energisation of solenoid, please refer to www.Telemechanique.com.
 (2) With entry for n° 11 (Pg 11) cable gland, replace the last digit in the reference by 1 (example: XCSPA592 becomes XCSPA591).
 (3) For other models, please refer to www.Telemechanique.com.



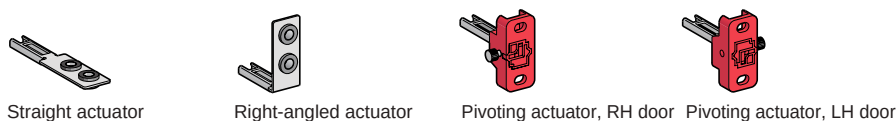
ISO entry
(to EN 50262)



Metal switches	Type XCSA/B/C 1 x ISO M20 cable entry (2)	Type XCSE 2 x ISO M20 cable entries (2)
Actuation speed (min → max)	0.1 m/s → 0.5 m/s	0.1 m/s → 0.5 m/s
Degree of protection	IP 67	IP 67
Rated operational characteristics (conforming to IEC/EN 60947-5-1)	AC 15, A 300 DC 13, Q 300	AC 15, B 300 DC 13, Q 300
Dimensions (body + head) W x D x H	40 x 44 x 113.5 mm	52 x 44 x 113.5 mm 52 x 44 x 113.5 mm 98 x 44 x 146 mm
Solenoid supply voltage	—	24 VAC/DC 110/120 VAC/DC 220/240 VAC/DC
Complete switch N/C + N/O + N/O	XCSA502 →	XCSE5312 → XCSE5332 → XCSE5342 →
N/C + N/C + N/O	XCSA702 →	XCSE7312 → XCSE7332 → XCSE7342 →

- (1) For locking on energisation of solenoid, please refer to www.Telemechanique.com.
 (2) With entry for n° 13 (Pg 13.5) cable gland, replace the last digit in the reference by 1 (example: XCSA502 becomes XCSA501).

Accessories

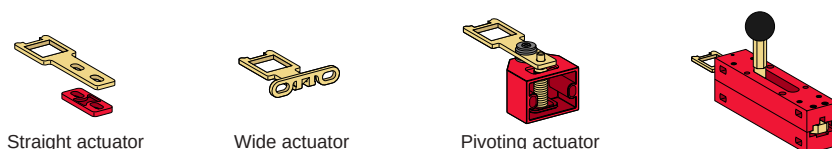


For safety switches XCSMP	Actuators
References	XCSZ81 XCSZ84 XCSZ83 XCSZ85



For safety switches XCSPA/TA/TE	Actuators	Retaining device
References	XCSZ11 XCSZ12 XCSZ14 XCSZ13	XCSZ21

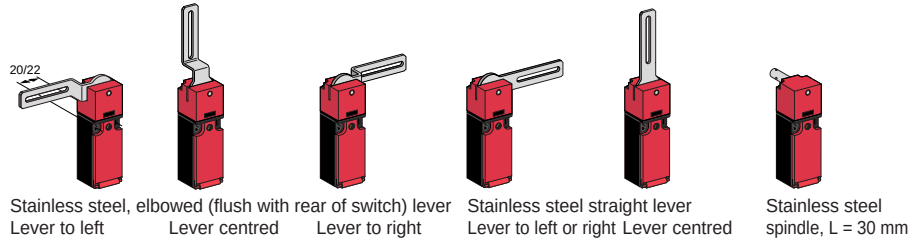
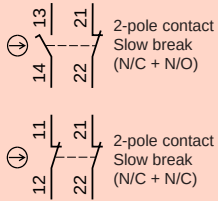
- (1) For L = 29 mm, reference = XCSZ15.



For safety switches XCSA/B/C/E	Actuators	Door lock
References	XCSZ01 XCSZ02 XCSZ03	XCSZ05

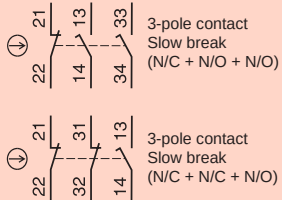
Safety switches with rotary lever or spindle

ISO entry
(to EN 50262)

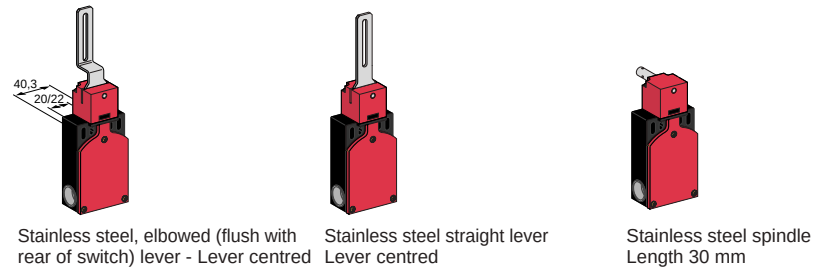


Plastic switches		Type XCSPL with rotary lever or XCSPR with spindle 1 x ISO M16 cable entry (1)					
Minimum torque (actuation / positive opening)		0.1 / 0.25 N.m	0.1 / 0.25 N.m	0.1 / 0.25 N.m	0.1 / 0.25 N.m	0.1 / 0.25 N.m	0.1 / 0.25 N.m
Degree of protection		IP 67	IP 67	IP 67	IP 67	IP 67	IP 67
Rated operational characteristics		AC 15, A 300 / DC 13, Q 300 (conforming to IEC/EN 60947-5-1)					
Dimensions (body + head) W x D x H		30 x 30 x 160 mm	30 x 30 x 160 mm	30 x 30 x 160 mm	30 x 30 x 160 mm	30 x 30 x 160 mm	30 x 30 x 96 mm
Tripping angle		5°	5°	5°	5°	5°	5°
Complete switch	N/C + N/O, break before make	XCSPL592 →	XCSPL582 →	XCSPL572 →	XCSPL562 →	XCSPL552 →	XCSPR552 →
	N/C + N/C	XCSPL792 →	XCSPL782 →	XCSPL772 →	XCSPL762 →	XCSPL752 →	XCSPR752 →

(1) With entry for n° 11 (Pg 11) cable gland, replace the last digit in the reference by 1 (example: XCSPL592 becomes XCSPL591).

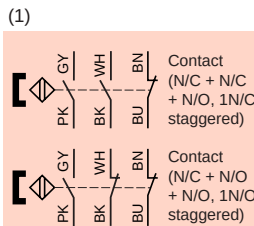
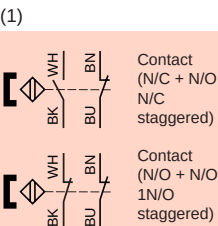


ISO entry
(to EN 50262)

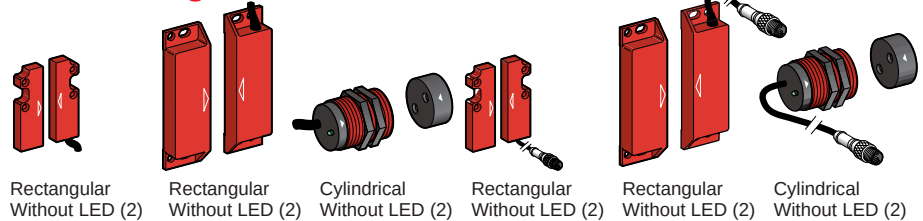


Plastic switches		Type XCSTL with rotary lever or XCSTR with spindle 2 x ISO M16 cable entries (1)		
Minimum torque (actuation / positive opening)		0.1 / 0.45 N.m	0.1 / 0.45 N.m	0.1 / 0.45 N.m
Degree of protection		IP 67	IP 67	IP 67
Rated operational characteristics		AC 15, A 300 / DC 13, Q 300 (conforming to IEC/EN 60947-5-1)		
Dimensions (body + head) W x P x H		52 x 30 x 180 mm	52 x 30 x 180 mm	52 x 30 x 117 mm
Tripping angle		5°	5°	5°
Complete switch	N/C + N/O + N/O, 2 N/O staggered	XCSTL582 →	XCSTL552 →	XCSTR552 →
	N/C + N/C + N/O, N/O staggered	XCSTL782 →	XCSTL752 →	XCSTR752 →

(1) With entry for n° 11 (Pg 11) cable gland, replace the last digit in the reference by 1 (example: XCSTL582 becomes XCSTL581).



Coded magnetic



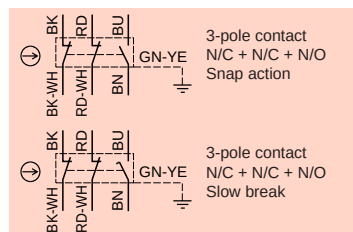
Plastic switches		Type XCSDM coded magnetic					
		Pre-cabled, L = 2 m			Connector on flying lead, L = 10 cm (3)		
Switches for actuation		Face to face, face to side, side to side			Face to face, face to side, side to side		
Degree of protection		IP 66 + IP 67			IP 66 + IP 67		
Type of contact		REED			REED		
Rated operational characteristics		Ue = 24 VDC, Ie = 100 mA			Ue = 24 VDC, Ie = 100 mA		
Dimensions W x D x H		16 x 7 x 51 mm	25 x 13 x 88 mm	M30 x 38,5 mm	16 x 7 x 51 mm	25 x 13 x 88 mm	M30 x 38.5 mm
Operating zone (4)		Sao = 5 / Sar = 15	Sao = 8 / Sar = 20		Sao = 5 / Sar = 15	Sao = 8 / Sar = 20	
Switch with coded magnet	N/C + N/O, N/C staggered	XCSDMC5902	XCSDMP5902	XCSDMR5902	XCSDMC590L01M8	XCSDMP590L01M12	XCSDMR590L01M12
	N/O + N/O, 1N/O staggered	XCSDMC7902	XCSDMP7902	XCSDMR7902	XCSDMC790L01M8	XCSDMP790L01M12	XCSDMR790L01M12
	N/C + N/C + N/O, 1N/C staggered	—	XCSDMP5002	—	—	XCSDMP500L01M12	—
	N/C + N/O + N/O, 1N/O staggered	—	XCSDMP7002	—	—	XCSDMP700L01M12	—

(1) NB. Contact states shown are with the magnet present.

(2) For version with LED indicator, replace the last 0 in the reference by 1 (example: XCSDMC5902 becomes XCSDMC5912).

(3) For associated pre-wired female connectors, please refer to the "Safety solution" catalogue.

(4) Sao: assured operating distance. Sar: assured release distance.



Metal end plunger



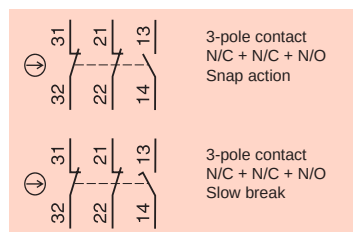
Roller plunger



Thermoplastic roller lever

Miniature switches		Type XCSM, metal pre-cabled, L = 1 m (1)		
Maximum actuation speed		0.5 m/s	0.5 m/s	1.5 m/s
Minimum force or torque (actuation / positive opening)		8.5 N / 42.5 N	7 N / 35 N	0.5 N.m / 0.1 N.m
Degree of protection		IP 66 + IP 67 + IP 68	IP 66 + IP 67 + IP 68	IP 66 + IP 67 + IP 68
Dimensions (body + head) W x D x H		30 x 16 x 60 mm	30 x 16 x 70.5 mm	30 x 32 x 92.5 mm
Complete switch	N/C + N/C + N/O snap action	XCSM3910L1 →	XCSM3902L1 →	XCSM3915L1 →
	N/C + N/C + N/O slow break	XCSM3710L1 →	XCSM3702L1 →	XCSM3715L1 →

(1) For a 2 m long cable, replace the last digit of the reference by 2 (example: XCSM3910L1 becomes XCSM3910L2).
For a 5 m long cable, replace the last digit of the reference by 5 (example: XCSM3910L1 becomes XCSM3910L5).



Metal end plunger



Roller plunger



Thermoplastic roller lever



Metal end plunger



Roller plunger

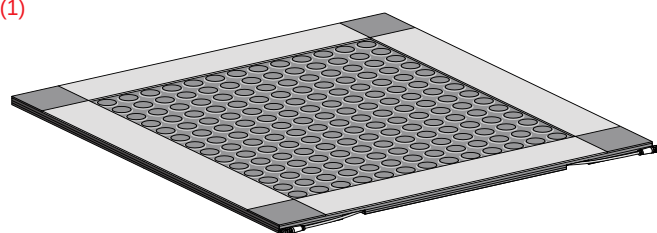


Thermoplastic roller lever

Compact switches		Type XCSD, metal 1 x ISO M20 x 1.5 cable entry (2)			Type XCSP, plastic 1 x ISO M20 x 1.5 cable entry (2)		
Maximum actuation speed		0.5 m/s		1.5 m/s	0.5 m/s		1.5 m/s
Minimum force or torque (actuation / positive opening)		15 N / 45 N	12 N / 36 N	10 N.m / 0.1 N.m	15 N / 45 N	12 N / 36 N	10 N.m / 0.1 N.m
Degree of protection		IP 66 + IP 67			IP 66 + IP 67		
Dimensions (body + head) W x D x H		34 x 34.5 x 89 mm	34 x 34.5 x 99.5 mm	34 x 43 x 121.5 mm	34 x 34.5 x 89 mm	34 x 34.5 x 99.5 mm	34 x 43 x 121.5 mm
Complete switch	N/C + N/C + N/O snap action	XCSD3910P20	XCSD3902P20	XCSD3918P20	XCSP3910P20	XCSP3902P20	XCSP3918P20
	N/C + N/C + N/O slow break	XCSD3710P20	XCSD3702P20	XCSD3718P20	XCSP3710P20	XCSP3702P20	XCSP3718P20

(2) For Pg 13.5 and 1/2" NPT cable entries, refer to www.Telemecanique.com.

Safety mats ⁽¹⁾



(1) For simplification of installation, see the "Protect Area design" software configuration tool. Reference: SISCD104200

Maximum category usage (EN 954-1)		Category 3			
Degree of protection		IP 67			
Response time (s)		Mat itself: 20 ms, with module: XPSAK ≤ 40 ms, XPSMP < 30 ms			
Sensitivity		Single mat > 20 kg / Group of mats > 35 kg			
Maximum load		2000 N/cm²			
Connection (2)		By M8 jumper cable (1 male / 1 female), L = 100 mm			
Dimensions W x D x H		500 x 500 x 11 mm	500 x 750 x 11 mm	750 x 750 x 11 mm	750 x 1250 x 11 mm
References		XY2TP1	XY2TP2	XY2TP3	XY2TP4

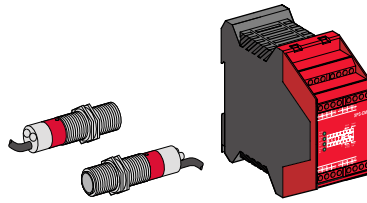
(2) For associated jumper cable and pre-wired connector, please refer to www.Telemecanique.com.

		Accessories								
Rails (set of 2)	Length	194 mm	394 mm	444 mm	494 mm	644 mm	694 mm	744 mm	1194 mm	1244 mm
References		XY2TZ10	XY2TZ20	XY2TZ30	XY2TZ40	XY2TZ50	XY2TZ60	XY2TZ70	XY2TZ80	XY2TZ90

Corners and rail connectors	External corners (set of 4)	Internal corner + external corner	Rail connectors, L = 56 mm with outlet for cable (set of 2)	Rail connectors, L = 6 mm (set of 2)
References	XY2TZ4	XY2TZ5	XY2TZ1	XY2TZ2

Light curtains

Type 2 conforming to IEC/EN 61496-1



Light curtain			Single-beam, infrared transmission
Height protected (conforming to prEN 999)			750 ... 1200 mm (1 to 4 beams)
Nominal sensing distance (Sn)			8 m
Number of circuits	Safety		2N/O
	Additional		4 solid-state
Response time			< 25 ms
Modules (integral muting function)		24 VDC	XPSCM1144P (1)
Thru-beam pairs,		Pre-cabled, L = 5m	PNP XU2S18PP340L5 (2)
axially aligned		M12 connector	PNP XU2S18PP340D (2)

(1) For version with non removable terminal block, delete the letter P from the end of the reference (example: XPSCM1144P becomes XPSCM1144).

(2) For alignment at 90° to the mounting axes, insert the letter W in the reference before the last letter (example: XU2S18PP340L5 becomes XU2S18PP340WL5).

Type 4 conforming to IEC/EN 61496-1 (3)

Light curtain functions

- Auto/Manual,
- Monitoring of external switching devices (EDM: External Devices Monitoring),
- Test input (MTS: Monitoring Test Signal, XUSLT only),
- Blanking (ECS/B),
- Floating Blanking (FB),
- Blanking + Floating Blanking,
- Alignment aid by LED display of each light beam broken,
- LED display of operating modes and alarms.



(1) For simplification of installation, see the "Protect Area design" software configuration tool. Reference: SISCD104200

Compact range			Multi-beam, infrared transmission			
Flying lead with end connector, L = 0.25 m			Compact		Slim	
Nominal sensing distance (Sn)			0.3...7.5 m	0.3...9 m	0.3...4.5 m	0.3...7 m
Detection capacity			14 mm "finger"	30 mm "hand"	14 mm "finger"	30 mm "hand"
Number of circuits	Safety		2 solid-state PNP	2 solid-state PNP	2 solid-state PNP	2 solid-state PNP
	Auxiliary (alarm)		1 solid-state PNP	1 solid-state PNP	1 solid-state PNP/NPN	1 solid-state PNP/NPN
Response time (depending on model)			20...40 ms	20...30 ms	7...24 ms	7...15 ms
Transmitter + receiver	Height protected (mm)	260	XUSLTQ6A0260	–	XUSLMN6X0150	XUSLMP5X0150
		350	XUSLTQ6A0350	XUSLTR5A0350	XUSLMN6X0300	XUSLMP5X0300
		435	XUSLTQ6A0435	–	XUSLMN6X0450	XUSLMP5X0450
		520	XUSLTQ6A0520	XUSLTR5A0520	XUSLMN6X0600	XUSLMP5X0600
		610	XUSLTQ6A0610	–	XUSLMN6X0750	XUSLMP5X0750
		700	XUSLTQ6A0700	XUSLTR5A0700	XUSLMN6X0900	XUSLMP5X0900
		870	XUSLTQ6A0870	XUSLTR5A0870	XUSLMN6X1050	XUSLMP5X1050
		955	XUSLTQ6A0955	–	XUSLMN6X1200	XUSLMP5X1200
		1045	XUSLTQ6A1045	XUSLTR5A1045	XUSLMN6X1350	XUSLMP5X1350
		1130	XUSLTQ6A1130	XUSLTR5A1130	XUSLMN6X1500	XUSLMP5X1500
		1215	XUSLTQ6A1215	XUSLTR5A1215	XUSLMN6X1650	XUSLMP5X1650
		1390	XUSLTQ6A1390	XUSLTR5A1390	XUSLMN6X1800	XUSLMP5X1800
		1570	–	XUSLTR5A1570		
		1745	–	XUSLTR5A1745		
		1920	–	XUSLTR5A1920		
		2095	–	XUSLTR5A2095		

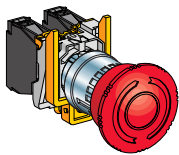
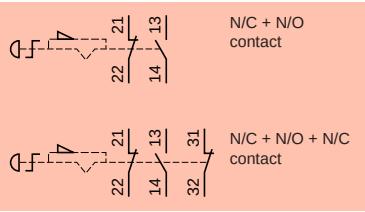
			Accessories				
Cable length			3 m	5 m	10 m	15 m	30 m
Pre-wired connector for (screened cable)	XUSLT	for receiver	–	XSZTCR05	XSZTCR10	XSZTCR15	XSZTCR30
		for transmitter	–	XSZTCT05	XSZTCT10	XSZTCT15	XSZTCT30
	XUSLM	for receiver	XSZMCR03	–	XSZMCR10	–	XSZMCR30
		for transmitter	XSZMCT03	–	XSZMCT10	–	XSZMCT30

Preventa

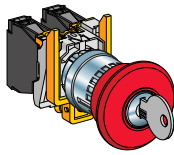
Operator dialogue

Emergency stops

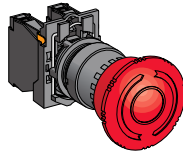
Ø 22 trigger action latching pushbuttons



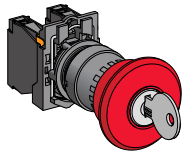
Turn to release



Key release
(key n° 455)



Turn to release

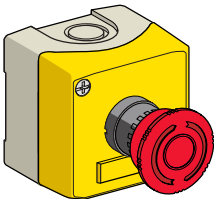
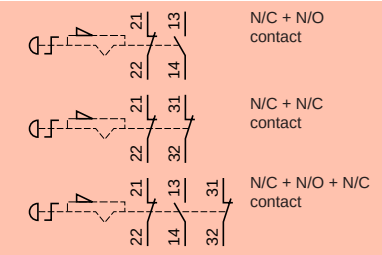


Key release
(key n° 455)

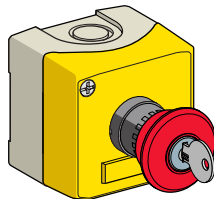
Pushbuttons		Metal		Plastic	
Mechanical life (millions of operating cycles)		0.3		0.3	
Shock / vibration resistance		10 gn / 5 gn		10 gn / 5 gn	
Degree of protection		IP 65		IP 65	
Rated operational characteristics		AC 15, A 600 / DC 13, Q 600 (conforming to IEC/EN 60947-5-1)			
Dimensions Ø x Depth		Ø 40 x 82 mm	Ø 40 x 104 mm	Ø 40 x 81.5 mm	Ø 40 x 103 mm
Contact	N/C + N/O	XB4BS8445	XB4BS9445	XB5AS8445	XB5AS9445
	N/C + N/O + N/C	XB4BS84441	ZB4BS944 + ZB4BZ141	–	ZB5AS944 + ZB5AZ141



Ø 22 trigger action latching pushbutton stations



Turn to release



Key release (key n° 455)

Enclosure		Plastic	
		2 x ISO M20 cable entries or n° 13 (Pg 13.5) cable gland	
Mechanical life (millions of operating cycles)		0.1	0.1
Shock / vibration resistance		10 gn / 5 gn	10 gn / 5 gn
Degree of protection		IP 65	IP 65
Rated operational characteristics		AC 15, A 600 / DC 13, Q 600 (conforming to IEC/EN 60947-5-1)	
Dimensions W x D x H		68 x 91 x 68 mm	68 x 113 x 68 mm
Contact	N/C + N/O	XALK178E	XALK188E
	N/C + N/C	XALK178F	XALK188F
	N/C + N/O + N/C	–	XALK188G

9

Legends



With legend holder



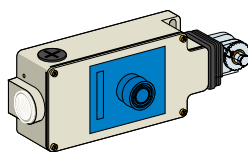
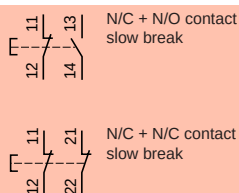
Colour		Red with white lettering	Yellow with black lettering
Dimensions		30 x 40 mm, circular appearance	Ø 60 mm
Marking:	"Emergency stop"	ZBY2330	ZBY9330
	"Arrêt d'urgence"	ZBY2130	ZBY9130
	"Not Aus"	ZBY2230	ZBY9230



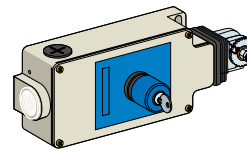
Emergency stops

Cable (tripwire) operated

ISO entry
(to EN 50262)



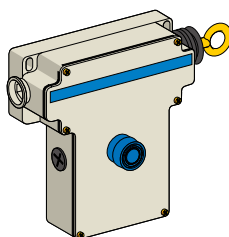
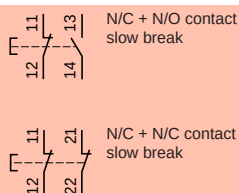
Booted pushbutton reset



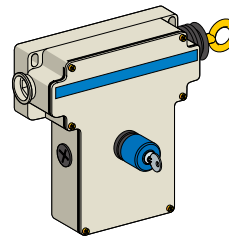
Key release pushbutton reset (key n° 421)

For operating cable length ≤ 15 m		Latching, without indicator light 1 x ISO M20 cable entry (1)	
Mechanical life (millions of operating cycles)		0.01	0.01
Shock / vibration resistance		50 gn / 10 gn	50 gn / 10 gn
Degree of protection		IP 65	IP 65
Rated operational characteristics		AC-15, A300 / DC-13, Q300 (conforming to IEC/EN 60947-5-1)	
Dimensions W x D x H		201 x 71 x 68 mm	201 x 71 x 68 mm
Operating cable length		≤ 15 m	≤ 15 m
Operating cable anchoring point		To right or to left	To right or to left
Contact	N/C + N/O slow break	XY2CH13250H29	XY2CH13450H29
	N/C + N/C slow break	XY2CH13270H29	XY2CH13470H29

(1) With entry for n° 13 (Pg 13.5) cable gland, delete H29 from the end of the reference (example: XY2-CH13250H29 becomes XY2-CH13250).



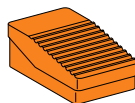
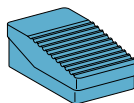
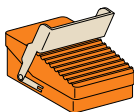
Booted pusbutton reset



Key release pushbutton reset (key n° 421)

For operating cable length ≤ 50 m		Latching, without indicator light 3 x ISO M20 cable entries or n° 13 (Pg 13.5) cable gland			
Mechanical life (millions of operating cycles)		0.01		0.01	
Shock / vibration resistance		50 gn / 10 gn		50 gn / 10 gn	
Degree of protection		IP 65		IP 65	
Rated operational characteristics		AC-15, A300 / DC-13, Q300 (conforming to IEC/EN 60947-5-1)			
Dimensions W x D x H		229 x 82 x 142 mm		229 x 82 x 142 mm	
Operating cable length		≤ 50 m		≤ 50 m	
Operating cable anchoring point		To left	To right	To left	To right
Contact	N/C + N/O slow break	XY2CE2A250	XY2CE1A250	XY2CE2A450	XY2CE1A450
	N/C + N/C slow break	XY2CE2A270	XY2CE1A270	–	XY2CE1A470

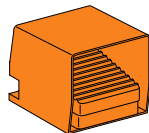
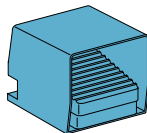
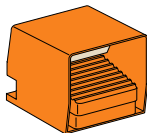
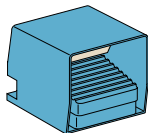
ISO entry
(to EN 50262)



Type		Foot switches without protective cover			
		2 cable entries for n° 16 (Pg 16) cable gland (1)			
Trigger mechanism		With (positive operating action reqd.)		Without	
Colour		Orange		Blue	Orange
Mechanical life (millions of operating cycles)		15			
Degree of protection		IP 66			
Rated operational characteristics		AC 15, A 300 / DC 13, Q 300 (conforming to IEC/EN 60947-5-1)			
Dimensions W x D x H		104 x 172 x 59 mm			
Contact operation	1 step	1 N/C + N/O	XPER810	XPER110	XPER110
		2 N/C + N/O	—	XPER111	XPER111
	2 step	2 N/C + N/O	XPER911	XPER211	XPER211
		Analogue output	XPER929	—	XPER229

(1) For entry for ISO M20 cable gland, also order adaptor DE9RA1620 (sold in lots of 5).

ISO entry
(to EN 50262)

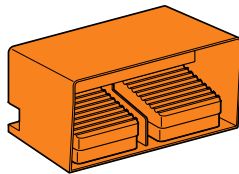
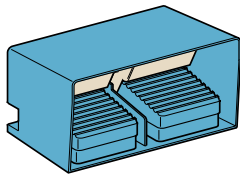


Type		Foot switches with protective cover			
		2 cable entries for n° 16 (Pg 16) cable gland (1)			
Trigger mechanism		With (positive operating action reqd.)		Without	
Colour		Blue	Orange	Blue	Orange
Mechanical life (millions of operating cycles)		15			
Degree of protection		IP 66			
Rated operational characteristics		AC 15, A 300 / DC 13, Q 300 (conforming to IEC/EN 60947-5-1)			
Dimensions W x D x H		160 x 186 x 152 mm			
Contact operation	1 step	1 N/C + N/O	XPER510	XPER510	XPER310
		2 N/C + N/O	XPER511	XPER511	XPER311
	1 step latching	1 N/C + N/O	—	—	XPER410
	2 step	2 N/C + N/O	XPER711	XPER711	XPER611
		Analogue output	XPER529	XPER529	—
				XPER329	

(1) For entry for ISO M20 cable gland, also order adaptor DE9RA1620 (sold in lots of 5).

Double pedal switches

ISO entry
(to EN 50262)



Type		Foot switches with protective cover			
		2 cable entries for n° 16 (Pg 16) cable gland (1)			
Trigger mechanism		With (positive operating action reqd.)		Without	
Colour		Blue	Orange	Blue	Orange
Mechanical life (millions of operating cycles)		15			
Degree of protection		IP 66			
Rated operational characteristics		AC 15, A 300 / DC 13, Q 300 (conforming to IEC/EN 60947-5-1)			
Dimensions W x D x H		295 x 190 x 155 mm			
Contact operation	1 step	2 x 1 N/C + N/O	XPER5100D	XPER5100D	XPER3100D
		2 x 2 N/C + N/O	XPER5110D	XPER5110D	XPER3110D

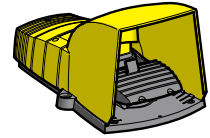
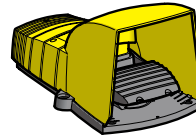
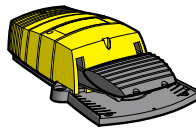
(1) For entry for ISO M20 cable gland, also order adaptor DE9RA1620 (sold in lots of 5).



Foot switches - plastic

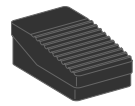
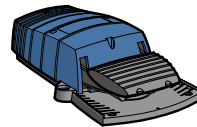
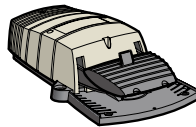
Single pedal switches

ISO entry
(to EN 50262)



Optimum series			Without protective cover 2 cable entries for ISO M20 cable gland		With protective cover
Trigger mechanism			Without		With (positive operating action reqd.)
Colour			Yellow		Yellow
Mechanical life (millions of operating cycles)			5		
Degree of protection			IP 55		
Rated operational characteristics			AC 15, A 300 / DC 13, Q 300 (conforming to IEC/EN 60947-5-1)		
Dimensions W x D x H			160 x 280 x 70 mm		160 x 280 x 162 mm
Contact operation	1 step	1 N/C + N/O	XPEY110	XPEY310	XPEY510
		2 N/C + N/O	–	XPEY311	XPEY511
	2 step	2 N/C + N/O	XPEY211	XPEY611	XPEY711

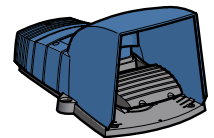
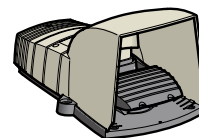
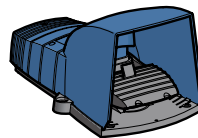
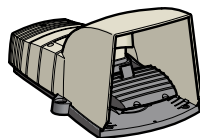
ISO entry
(to EN 50262)



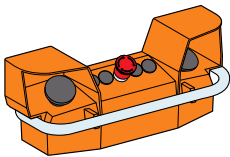
Universal series (conforming to NF E 09031)			Foot switches without protective cover 2 cable entries for ISO M20 cable gland			1 entry (1)
Trigger mechanism			With (positive operating action reqd.)		Without	Without
Colour			Grey		Blue	Grey
Mechanical life (millions of operating cycles)			10			2
Degree of protection			IP 66			IP 43
Rated operational characteristics			AC 15, A 300 / DC 13, Q 300 (conforming to IEC/EN 60947-5-1)			
Dimensions W x D x H			160 x 280 x 70 mm			94 x 161 x 54 mm
Contact operation	1 step	1 N/C + N/O	XPEG810	XPEB110	XPEG110	XPEA110
		2 N/C + N/O	–	XPEB111	XPEG111	XPEA111
	2 step	2 N/C + N/O	XPEG911	XPEB211	XPEG211	–

(1) Cable entry for ISO M16 or n° 9 (Pg 9) cable gland and for ISO M20 or n° 13 (Pg 13.5) cable gland.

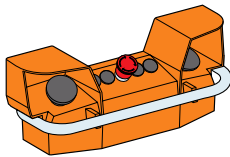
ISO entry
(to EN 50262)



Universal series (conforming to NF E 09031)			Foot switches with protective cover 2 cable entries for ISO M20 cable gland			
Trigger mechanism			With (positive operating action reqd.)		Without	
Colour			Grey		Blue	Grey
Mechanical life (millions of operating cycles)			10			
Degree of protection			IP 66			
Rated operational characteristics			AC 15, A 300 / DC 13, Q 300 (conforming to IEC/EN 60947-5-1)			
Dimensions W x D x H			160 x 280 x 162 mm			
Contact operation	1 step	1 N/C + N/O	XPEG510	XPEB510	XPEG310	XPEB310
		2 N/C + N/O	XPEG511	XPEB511	XPEG311	XPEB311
	2 step	2 N/C + N/O	XPEG711	XPEB711	XPEG611	XPEB611



2 control pushbuttons and 1 mushroom head
Emergency stop or Lock out pushbutton



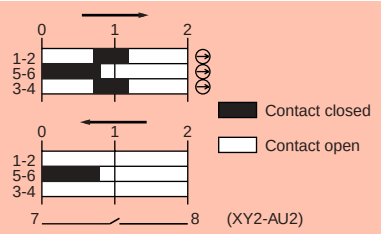
2 control pushbuttons and 1 mushroom head Emergency
stop or Lock out pushbutton, with pre-wired terminal block

Type	Two-hand control stations	
	2 cable entries for ISO M20 or n° 13 (Pg 13.5) cable gland, 1 cable entry for n° 21 (Pg 21) cable gland (2)	
Mechanical life (millions of operating cycles)	1	1
Degree of protection	IP 65	IP 65
Rated operational characteristics	AC 15, A 600 / DC 13, Q 600 (conforming to IEC/EN 60947-5-1)	
Dimensions W x D x H	455 x 170 x 188.5 mm	
Red emergency stop (N/C + N/C slow break)	XY2SB71 (1)	XY2SB72 (1)
Yellow lock out (N/C + N/O break before make)	XY2SB75	XY2SB76

- (1) To order a two-hand control station with pedestal XY2SB90, add 4 to the end of the reference (example: XY2SB71 becomes XY2SB714).
- (2) For entry for ISO M25 cable gland, also order adaptor DE9RA2125 + fixing nut DE9EC21 (sold in lots of 5).

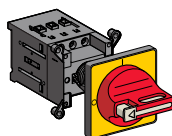
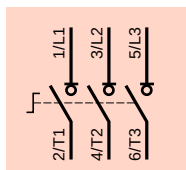
Enabling switch

Contact states

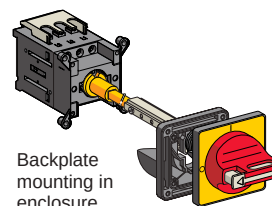


Type	Plastic grip	
	Entry for Ø 7 to 13 mm cable	
Number of contacts	3	3
Type of contacts	2 enabling, 3 positions + 1 N/C	2 enabling, 3 positions + 1 N/C + additional 1 N/O contact
Description	Without button	With button for N/O contact (auxiliary)
Shock / vibration resistance	10 gn / 6 gn	
Degree of protection	IP 66	IP 65
Rated operational characteristics	AC 15, C300 / DC 13, R300 (conforming to IEC/EN 60947-5-1)	
Dimensions W x D x H	46 x 58 x 261 mm	46 x 58 x 269 mm
References	XY2AU1	XY2AU2

For fixing accessories, please refer to www.Telemecanique.com.

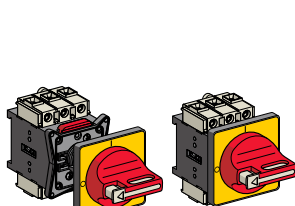
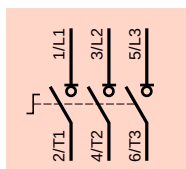


Door mounting

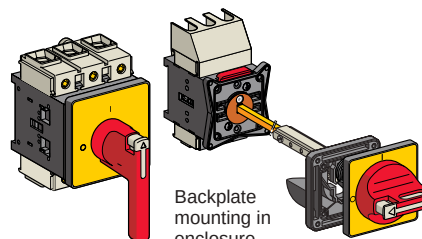


Backplate mounting in enclosure

Type	Mini-Vario for standard applications	
Front plate dimensions (mm)	60 x 60	60 x 60
Fixing	Ø 22.5 mm	Ø 22.5 mm
Degree of protection	IP 20	IP 20
Rated operational voltage (Ue)	690 V	690 V
Thermal current in open air (Ith)	12 A	VCDN12
	20 A	VCDN20
		VCCDN20



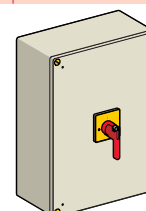
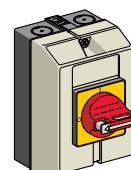
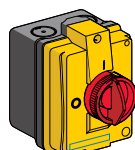
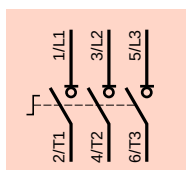
Door mounting



Backplate mounting in enclosure

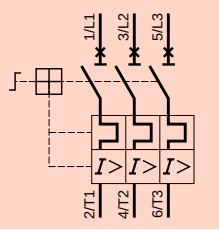
Type	Vario for high performance applications					
Front plate dimensions (mm)	60 x 60	60 x 60	90 x 90	60 x 60	60 x 60	90 x 90
Fixing	Ø 22.5 mm	4 screws	4 screws	Ø 22.5 mm	4 screws	4 screws
Degree of protection	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Rated operational voltage (Ue)	690 V	690 V	690 V	690 V	690 V	690 V
Thermal current in open air (Ith)	12 A	VCD02	VCF02	—	VCCD02	VCCF02
	20 A	VCD01	VCF01	—	VCCD01	VCCF01
	25 A	VCD0	VCF0	—	VCCD0	VCCF0
	32 A	VCD1	VCF1	—	VCCD1	VCCF1
	40 A	VCD2	VCF2	—	VCCD2	VCCF2
	63 A	—	VCF3	—	—	VCCF3
	80 A	—	VCF4	—	—	VCCF4
	125 A	—	—	VCF5	—	—
	175 A	—	—	VCF6	—	—
						VCCF5
						VCCF6

Enclosed

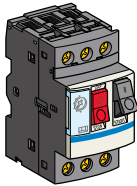


Type	Mini-Vario	Vario
Front plate dimensions (mm)	60 x 60	60 x 60
Dimensions W x D x H	82.5 x 106 x 131 mm	90 x 131 x 146 mm
Degree of protection	IP 55	IP 65
Rated operational voltage (Ue)	690 V	690 V
Thermal current in enclosure (Ithe)	10 A	VCFN12GE
	16 A	VCFN20GE
	20 A	VCFN25GE
	25 A	VCFN32GE
	32 A	VCFN40GE
	50 A	—
	63 A	—
	100 A	—
	140 A	—
		VCF02GE
		VCF01GE
		VCF0GE
		VCF1GE
		VCF2GE
		VCF3GE (1)
		VCF4GE (1)
		—
		VCF5GE
		VCF6GE

(1) Dimensions W x D x H: 150 x 152 x 170 mm.

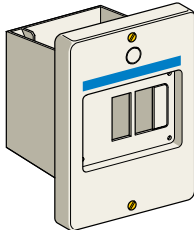
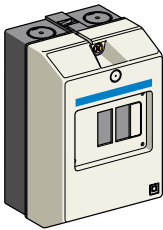


Complete circuit-breaker: circuit-breaker + enclosure + safety device.
Ex.: GV2ME01 + GV2MC02 + GV2K04.



Type		Thermal-magnetic motor circuit-breakers				
Motor power	kW (on 400 V)	–	0.06	0.09	0.12...0.18	0.25...0.37
Setting range	A	0.1...0.16	0.16...0.25	0.25...0.40	0.40...0.63	0.63...1
Current Id ± 20%	A	1.5	2.4	5	8	13
Current Ithe (in enclosure)	A	0.16	0.25	0.40	0.63	1
Reference		GV2ME01	GV2ME02	GV2ME03	GV2ME04	GV2ME05
Motor power	kW (on 400 V)	0.37...0.55	0.75	1.1...1.5	2.2	3...4
Setting range	A	1...1.6	1.6...2.5	2.5...4	4...6.3	6...10
Current Id ± 20%	A	22.5	33.5	51	78	138
Current Ithe (in enclosure)	A	1.6	2.5	4	6.3	9
Reference		GV2ME06	GV2ME07	GV2ME08	GV2ME10	GV2ME14
Motor power	kW (on 400 V)	5.5	7.5	9...11	11	15
Setting range	A	9...14	13...18	17...23	20...25	24...32
Current Id ± 20%	A	170	223	327	327	416
Current Ithe (in enclosure)	A	13	17	21	23	24
Reference		GV2ME16	GV2ME20	GV2ME21	GV2ME22	GV2ME32

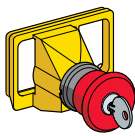
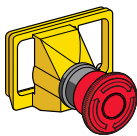
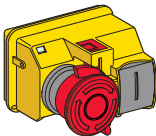
Enclosure



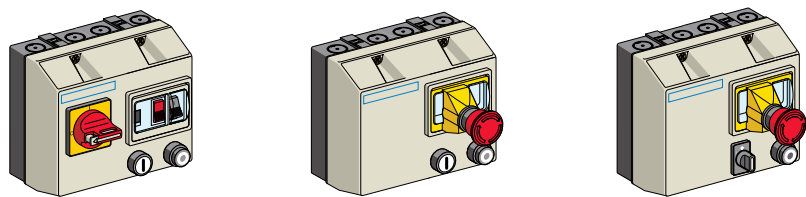
Type		Empty enclosure	
Mounting		Surface mounting	Flush mounting
Degree of protection		IP 55	IP 55 (front face)
Dimensions W x D x H (1)		93 x 145.5 x 147 mm	93 x 55 x 126 mm
References		GV2MC02	GV2MP02

(1) Dimensions with safety device GV2K04 fitted.

Safety device



Type		Safety devices		
With red mushroom head		Turn to release Padlockable in "Off" position	Turn to release	Key release (key n° 455)
References		GV2K04	GV2K031	GV2K021



Type				Non reversing		Reversing
Degree of protection				IP 657	IP 657	IP 657
Standard motor power ratings (kW), category AC3				Basic reference, to be completed by code indicating voltage (1)		
220/230 V	400/415 V	440 V	Ith setting range (A)			
–	0.06	0.06	0.16...0.25	LG1K065●●02	LG7K06●●02	LG8K06●●02
0.06	0.09	0.12	0.25...0.40	LG1K065●●03	LG7K06●●03	LG8K06●●03
–	0.18	0.18	0.40...0.63	LG1K065●●04	LG7K06●●04	LG8K06●●04
0.12	0.25	0.25	0.63...1	LG1K065●●05	LG7K06●●05	LG8K06●●05
0.25	0.55	0.55	1...1.6	LG1K065●●06	LG7K06●●06	LG8K06●●06
0.37	0.75	1.1	1.6...2.5	LG1K065●●07	LG7K06●●07	LG8K06●●07
0.75	1.5	1.5	2.5...4	LG1K065●●08	LG7K06●●08	LG8K06●●08
1.1	2.2	3	4...6.3	LG1K065●●10	LG7K06●●10	LG8K06●●10
1.5	4	4	6...10	LG1K095●●14	LG7K09●●14	LG8K09●●14
3	5.5	5.5	9...14	LG1D122●●16	LG7D12●●16	LG8K12●●16
4	7.5	9	13...18	LG1D182●●20	LG7D18●●20	–
4	9	9	17...23	LG1D182●●21	LG7D18●●21	–



With integral control transformer, 400/24 V

With integral control transformer, 400/24 V

Type		Non reversing	Reversing
Degree of protection		IP 657	IP 657
Standard motor power ratings (kW), category AC3	Ith setting	Basic references	
380/400 V	range (A)	(The code Q7 (380/400 V) designates the power supply voltage to which the starter will be connected)	
0.06	0.16...0.25	LJ7K06Q702	LJ8K06Q702
0.09	0.25...0.40	LJ7K06Q703	LJ8K06Q703
0.18	0.40...0.63	LJ7K06Q704	LJ8K06Q704
0.25	0.63...1	LJ7K06Q705	LJ8K06Q705
0.55	1...1.6	LJ7K06Q706	LJ8K06Q706
0.75	1.6...2.5	LJ7K06Q707	LJ8K06Q707
1.5	2.5...4	LJ7K06Q708	LJ8K06Q708
2.2	4...6.3	LJ7K06Q710	LJ8K06Q710
4	6...10	LJ7K09Q714	LJ8K09Q714

Control circuit voltages available				
Volts 50/60 Hz	24 V	230 V	400 V	415 V
(1) Voltage code	B7	P7	V7	N7

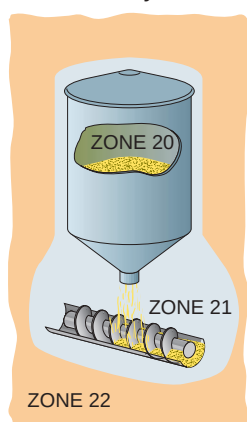
The control circuit must be cabled by the user.

The essential guide

A selection of certified products, conforming to the European Directive ATEX94/9/EC, to ensure maximum safety for your installations in a zone where the risk of explosion or fire is high.



The products in this catalogue are certified by a European Union Commission notified body.



Flour mills



Bagging



A wide range of products designed to operate in environments subject to risks!

A reference for installations in ATEX Dust explosive atmospheres.

What is an explosive atmosphere according to the Directive?

It is the mixing with air, in atmospheric conditions, of flammable substances in the form of gas, vapour, mist or dust which, in the event of combustion, spreads throughout the non burning mix.

Implementation of European Directives

■ Directive 99/92/EC

This requires that a risk analysis be performed for all industrial processes.

If there is any risk of an explosion:

- the zones are defined and physically identified,
- the installation is classified by governing bodies.

■ Directive 94/9/EC

This requires certification of the products in accordance with the classification of the zones of use

■ Dust zones

- Zone 20: area where an explosive atmosphere exists in the form of combustible clouds of dust in the air, either permanently, for long periods or frequently.
- Zone 21: area where an explosive atmosphere exists in the form of combustible clouds of dust in the air during normal operation occasionally.
- Zone 22: area where an explosive atmosphere in the form of combustible clouds of dust in the air is unlikely to occur during normal operation but, if it does occur, it is only for a short period.

Main sectors of activity subject to a higher risk of explosion or fire

Grain silos



Grain drying areas



Bulk conveying



Wood and aluminium workshops



Contents



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Modicon Quantum

Inductive proximity sensors Universal, metal case



M12

M18

M30

Sensor type		3-wire DC PNP, flush mountable in metal		
Conformity		Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1		
Zone D (dust)		21 - 22		
EC type examination certificate number / marking		INERIS 04ATEX0022X /  II 2 D-Ex tD A21 IP68 T90°C		
Nominal sensing distance S_n		4 mm	8 mm	15 mm
Operating zone		0...3.2 mm	0...6.4 mm	0...12 mm
Temperature range		- 20...+ 60°C		
Degree of protection (conforming to IEC 60529)		IP68		
Connection		Pre-cabled, PvR, L = 10 m		
Dimensions		M12 x 50 mm	M18 x 60 mm	M30 x 60 mm
Supply voltage (including ripple)		10...58 VDC		
Maximum switching capacity		200 mA		
Overload and short-circuit protection		Yes		
LED output state indicator		Yes		
Voltage drop, closed state, at I nominal		≤ 2 V		
Switching frequency		2500 Hz	1000 Hz	500 Hz
References	NO function	XS612B1PAL10EX	XS618B1PAL10EX	XS630B1PAL10EX
	NC function	XS612B1PBL10EX	XS618B1PBL10EX	XS630B1PBL10EX

Analogue, metal case



M12

M18

M30

Sensor type		Analogue, 2-wire AC/DC, flush mountable in metal		
Conformity		Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1		
Zone D (dust)		21 - 22		
EC type examination certificate number / marking		INERIS 04ATEX0022X /  II 2 D-Ex tD A21 IP67 T90°C		
Nominal sensing distance S_n		2 mm	5 mm	10 mm
Operating zone		0.2...2 mm	0.5...5 mm	1...10 mm
Temperature range		- 20...+ 60°C		
Degree of protection (conforming to IEC 60529)		IP67		
Connection		Pre-cabled, PvR, L = 2 m		
Dimensions		M12 x 50 mm	M18 x 60 mm	M30 x 60 mm
Supply voltage (including ripple)		10...38 VAC/DC		
Linearity error		10%		
Operating frequency		1500 Hz	500 Hz	300 Hz
References	4...20 mA output	XS1M12AB120EX	XS1M18AB120EX	XS1M30AB120EX

Proximity sensors

Rotation monitoring, metal case



M30

Sensor type	3-wire DC PNP, flush mountable in metal	
Conformity	Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1	
Zone D (dust)	21 - 22	
EC type examination certificate number / marking	INERIS 04ATEX0022X / II 2 D-Ex tD A21 IP67 T90°C	
Nominal sensing distance Sn	10 mm	
Operating zone	0...8 mm	
Temperature range	- 20...+ 60°C	
Degree of protection (conforming to IEC 60529)	IP67	
Connection	Pre-cabled, PvR, L = 2 m	
Dimensions	M30 x 81 mm	
Supply voltage (including ripple)	10...58 VDC	
Maximum switching capacity	200 mA	
Overload and short-circuit protection	Yes	
LED output state indicator	Yes	
Voltage drop, closed state, at I nominal	≤ 2 V	
Version	Slow	Fast
Maximum speed of passing object	6000 impulses/minute	48,000 impulses/minute
Adjustable frequency range	6...150 impulses/minute	120...3000 impulses/minute
References	NC function	XSAV11373EX
		XSAV12373EX

Capacitive, metal case



M18



M30

Sensor type	3-wire DC PNP, flush mountable in metal	
Conformity	Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1	
Zone D (dust)	21 - 22	
EC type examination certificate number / marking	INERIS 04ATEX0022X / II 2 D-Ex tD A21 IP67 T90°C	
Nominal sensing distance Sn	5 mm	10 mm
Operating zone	0...3.6 mm	0...7.2 mm
Temperature range	- 20...+ 60°C	
Degree of protection (conforming to IEC 60529)	IP67	
Connection	Pre-cabled, PVC, L = 2 m	
Dimensions	M18 x 60 mm	M30 x 60 mm
Supply voltage (including ripple)	10...38 VDC	
Maximum switching capacity	300 mA	
Overload and short-circuit protection	Yes	
LED output state indicator	Yes	
Voltage drop, closed state, at I nominal	≤ 2 V	
Switching frequency	100 Hz	
References	NO function	XT1M18PA372EX
		XT1M30PA372EX
	NC function	XT1M18PB372EX
		XT1M30PB372EX

Namur inductive sensors Metal or plastic case



Sensor type	2-wire DC, flush mountable in metal					
Case type	Metal			Plastic		
Conformity	Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, EN 50020, EN 50284, pr IEC 61241-0, pr IEC 61241-1					
Zone D (dust)	20 (to be used in conjunction with intrinsically safe enclosures, see page 5)					
EC type examination certificate number / marking	INERIS 04ATEX0016X /  II 1 D-Ex iaD 20 IP66/67 T85°C					
Nominal sensing distance Sn	0.8 mm	1.5 mm		2 mm	5 mm	10 mm
Operating zone	0...0.6 mm	0...0.8 mm	0...1.2 mm	0...1.6 mm	0...4 mm	0...8 mm
Temperature range	– 20...+ 60°C					
Degree of protection (conforming to IEC 60529)	IP67					
Connection	Pre-cabled, PvR, L = 2 m					
Dimensions	M5 x 30 mm	M8 x 26.5 mm		M12 x 38.5 mm	M18 x 41 mm	M30 x 43.5 mm
Supply voltage (including ripple)	7...12 VDC					
Maximum switching capacity	≤ 1 mA					
Overload and short-circuit protection	Yes					
Residual current, open state	≥ 3 mA					
Switching frequency	1500 Hz		1000 Hz	800 Hz	500 Hz	300 Hz
References	NC function	XSMN08122EX	XSAN01122EX	XSPN01122EX	XSPN02122EX	XSPN05122EX
					XSPN10122EX	

Plastic case



Sensor type	2-wire DC, non flush mountable in metal				
Case type	Plastic				
Conformity	Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, EN 50020, EN 50284, pr IEC 61241-0, pr IEC 61241-1				
Zone D (dust)	20				
EC type examination certificate number / marking	INERIS 04ATEX0016X /  II 1 D-Ex iaD 20 IP66/67 T85°C				
Nominal sensing distance Sn	4 mm	8 mm	15 mm	15 mm	40 mm
Operating zone	0...3.2 mm	0...6.4 mm	0...12 mm	0...12 mm	0...32 mm
Temperature range	- 20...+ 60°C				
Degree of protection (conforming to IEC 60529)	IP67				
Connection	Pre-cabled, PvR, L = 2 m			Screw terminals	
Dimensions	M12 x 38.5 mm	M18 x 41 mm	M30 x 43.5 mm	40 x 40 x 122.5 mm	100 x 80 x 40 mm
Supply voltage (including ripple)	7...12 VDC				
Maximum switching capacity	≤ 1 mA				
Overload and short-circuit protection	Yes				
LED output state indicator	Yes				
Residual current, open state	≥ 3 mA				
Switching frequency	400 Hz	300 Hz	200 Hz	100 Hz	25 Hz
References	NC function		XSPN04122EX	XSPN08122EX	XSPN15122EX
				XSCN151229EX (1)	XSDN401229EX

(1) Flush mountable in metal



Intrinsically safe enclosures

Processing module



Module type		Discrete							
		Inputs		Relay inputs/outputs					
Conformity		Directive ATEX 94/9/EC, EN 50014, EN 50020, EN 50021-1&2, EN 50082-1&2							
Zone D (dust)		Mounted outside zone (to be used in conjunction with products for zone 20, 21 or 22)							
EC type examination certificate number / marking		LCIE 00ATEX6034X /  II(1) G/D-[EEx ia] IIC							
Zone 20	Number of input channels	2	4	2	2				
	Number of output channels	–		1	1				
	Type of output channel, load excitation	–		Low consumption solenoid valve, < 7 mA	High consumption solenoid valve, < 40 mA				
Outside zone				–	with hysteresis		–	with hysteresis	
	Number of recopying channels	2	4	2	2				
	Switching voltage	5...230 VAC; 5...24 VDC							
	Switching current	10 mA...0.5 A (AC); 10 mA...0.5 A, L/R 48 ms (DC)							
Temperature range		– 20...+ 60°C							
Connection		Removable screw terminal blocks							
Mounting		On 35 mm DIN rail							
Dimensions, W x D x H		29.5 x 120 x 90 mm							
Supply voltage (including ripple)		24 VDC (0.95...1.1 Un)							
Consumption		5 W							
References		NY320N2RB1	NY340N4RB1	NY321L2RB1	NY321L1RB1	NY321H2RB1	NY321H1RB1		



Module type		Discrete			
		Load excitation outputs			
Conformity		Directive ATEX 94/9/EC, EN 50014, EN 50020, EN 50021-1&2, EN 50082-1&2			
Zone D (dust)		Mounted outside zone (to be used in conjunction with products for zone 20, 21 or 22)			
EC type examination certificate number / marking		LCIE 00ATEX6034X / II(1) G/D-[EEx ia] IIC			
Zone 20	Number of load excitation channels	2		4	
	Maximum current	< 7 mA	< 40 mA	< 7 mA	< 40 mA
Outside zone	Control voltage	24 VDC ± 10%			
	Control current	State 1 = 6.5 < I < 9 mA and 21.6 < U < 26.4 V; State 0 = I ≤ 0.4 mA and U ≤ 1.2 V			
Temperature range		– 20...+ 60°C			
Connection		Removable screw terminal blocks			
Mounting		On 35 mm DIN rail			
Dimensions, W x D x H		29.5 x 120 x 90 mm			
Supply voltage (including ripple)		24 VDC (0.95...1.1 Un)			
Consumption		5 W			
References		NY302L0NB1	NY302H0NB1	NY304L0NB1	NY304H0NB1

Limit switches

Miniature, fixing by the body



Limit switch type	XCMD metal, pre-cabled			
With head for movement	Linear (plunger)			
Conformity	Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1			
Zone D (dust)	21 - 22			
EC type examination certificate number / marking	INERIS 04ATEX0014X /  II 2 D-Ex tD A21 IP66/67 T85°C			
Type of operator	Metal end plunger	Metal end plunger with elastomer boot	Steel roller plunger	Retractable steel roller lever plunger
Mechanical durability (millions of operating cycles)	10			
Actuation speed	0.5 m/s			
Switches conforming to standard IEC 947-5-1 section 3	☉			
Temperature range	- 20...+ 60°C			
Degree of protection (conforming to IEC 60529)	IP66 and IP67			
Rated operational characteristics	AC15; C300 (Ue = 240 V, Ie = 0.75 A)/DC13; R300 (Ue = 250 V, Ie = 0.1 A)			
Short-circuit protection	By 6 A cartridge fuse type gG (gl)			
Cable entry	Pre-cabled, adjustable direction, length = 5 m			
Fixing centres	20 mm			
Body dimensions, W x D x H	30 x 16 x 50 mm			
References	2 N/C + 2 N/O snap action	XCMD4110L5EX	XCMD4111L5EX	XCMD4102L5EX XCMD4124L5EX

Compact, fixing by the body



Limit switch type	XCKD metal conforming to standard EN 500047				
With head for movement	Linear (plunger)				
Conformity	Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1				
Zone D (dust)	21 - 22				
EC type examination certificate number / marking	INERIS 04ATEX0014X /  II 2 D-Ex tD A21 IP66/67 T85°C				
Type of operator	Metal end plunger	Metal end plunger with elastomer boot	Steel roller plunger	Thermoplastic roller lever plunger, horiz. actuation in 1 direct.	Thermoplastic roller lever plunger, vert. actuation in 1 direct.
Mechanical durability (millions of operating cycles)	15		10	15	
Actuation speed	0.5 m/s			1 m/s	
Switches conforming to standard IEC 947-5-1 section 3	☉				
Temperature range	- 20...+ 60°C				
Degree of protection (conforming to IEC 60529)	IP66 and IP67				
Rated operational characteristics	AC15; B300 (Ue = 240 V, Ie = 1.5 A)/DC13; R300 (Ue = 250 V, Ie = 0.1 A)				
Short-circuit protection	By 6 A cartridge fuse type gG (gl)				
Cable entry	1 entry fitted with ISO M16 cable gland				
Fixing centres	20 mm				
Body dimensions, W x D x H	31 x 30 x 65 mm				
References	N/C + N/C + N/O snap action	XCKD3910P16EX	XCKD3911P16EX	XCKD3902P16EX XCCKD3921P16EX	XCKD3927P16EX

Miniature, fixing by the head



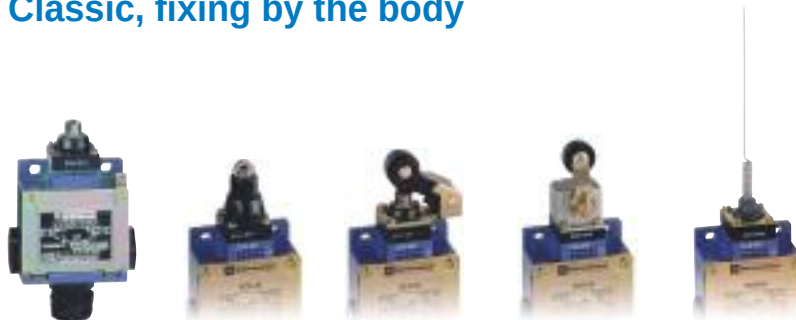
XCMD metal, pre-cabled				Linear (plunger)		
Rotary (lever)						
Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1						
21 - 22						
INERIS 04ATEX0014X /  II 2 D-Ex tD A21 IP66/67 T85°C						
Steel roller lever	Thermoplastic roller lever	Roller lever with ball bearing mounted roller	Variable length thermoplastic roller lever	M12 with metal end plunger	M16 with metal end plunger with elastomer boot	M12 with steel roller plunger
10						
1.5 m/s				0.5 m/s		0.1 m/s
⊖						
– 20...+ 60°C						
IP66 and IP67						
AC15; C300 (Ue = 240 V, Ie = 0.75 A)/DC13; R300 (Ue = 250 V, Ie = 0.1 A)						
By 6 A cartridge fuse type gG (gl)						
Pre-cabled, adjustable direction, length = 5 m						
20 mm				M12 x 1	M16 x 1	M12 x 1
30 x 16 x 50 mm						
XCMD4116L5EX	XCMD4115L5EX	XCMD4117L5EX	XCMD4145L5EX	XCMD41F0L5EX	XCMD41G1L5EX	XCMD41F2L5EX



XCKD metal conforming to standard EN 500047							
Linear (plunger)				Rotary (lever)		Multi-directional	Linear (plunger)
Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1							
21 - 22							
INERIS 04ATEX0014X /  II 2 D-Ex tD A21 IP66/67 T85°C							
Thermoplastic roller lever plunger, horiz. or vert. actuation in 1 dir.	Thermoplastic roller lever	Thermoplastic roller lever, Ø 50 mm	Variable length thermoplastic roller lever	Variable length thermoplastic roller lever, Ø 50 mm	"Cat's whisker"	M18 with metal end plunger	M18 with steel roller plunger
15	10				5	10	
1 m/s	1.5 m/s				1 m/s	0.5 m/s	
⊖					–	⊕	
– 20...+ 60°C							
IP66 and IP67							
AC15; B300 (Ue = 240 V, Ie = 1.5 A)/DC13; R300 (Ue = 250 V, Ie = 0.1 A)							
By 6 A cartridge fuse type gG (gl)							
1 entry fitted with ISO M16 cable gland							
20 mm						M18 x 1	
30 x 16 x 50 mm							
XCKD3928P16EX	XCKD3918P16EX	XCKD3939P16EX	XCKD3945P16EX	XCKD3949P16EX	XCKD3906P16EX	XCKD39H0P16EX	XCKD39H2P16EX

Limit switches

Classic, fixing by the body



Limit switch type	XCKM metal, 3 cable entries				
With head for movement	Linear (plunger)			Rotary (lever)	Multi-directional
Conformity	Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1				
Zone D (dust)	21 - 22				
EC type examination certificate number / marking	INERIS 04ATEX0014X /  II 2 D-Ex tD A21 IP66/67 T85°C				
Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever plunger, horiz. actuation in 1 direct.	Thermoplastic roller lever	"Cat's whisker"
Mechanical durability (millions of operating cycles)	20				10
Actuation speed	0.5 m/s		1.5 m/s		0.5 m/s
Switches conforming to standard IEC 947-5-1 section 3					–
Temperature range	– 20...+ 60°C				
Degree of protection (conforming to IEC 60529)	IP66				
Rated operational characteristics	AC15; B300 (Ue = 240 V, Ie = 1.5 A)/DC13; R300 (Ue = 250 V, Ie = 0.1 A)				
Short-circuit protection	By 6 A cartridge fuse type gG (gl)				
Cable entry	3 tapped entries for ISO M20 cable gland (1)				
Fixing centres	41 mm				
Body dimensions, W x D x H	63 x 30 x 64 mm				
References	N/C + N/C + N/O snap action	XCKM3910H29EX	XCKM3902H29EX	XCKM3921H29EX	XCKM3915H29EX XCKM3906H29EX

(1) 2 entries fitted with blanking plugs, 1 entry fitted with ISO M20 cable gland

Application - hoisting, handling, conveying



Limit switch type	XCKMR metal, 3 cable entries	
With head for movement	Rotary (lever)	
Conformity	Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1	
Zone D (dust)	21 - 22	
EC type examination certificate number / marking	INERIS 04ATEX0014X /  II 2 D-Ex tD A21 IP66/67 T85°C	
Type of operator	Metal rod levers, "crossed"	Metal rod levers, "crossed" reversed head
Mechanical durability (millions of operating cycles)	2	
Actuation speed	1.5 m/s	
Switches conforming to standard IEC 947-5-1 section 3	☉	
Temperature range	– 20...+ 60°C	
Degree of protection (conforming to IEC 60529)	IP66	
Rated operational characteristics	AC15; A300 (Ue = 240 V, Ie = 3 A)/DC13; Q300 (Ue = 125 V, Ie = 0.55 A)	
Short-circuit protection	By 10 A cartridge fuse type gG (gl)	
Cable entry	3 tapped entries for ISO M20 cable gland (1)	
Fixing centres	61.5 mm	
Body dimensions, W x D x H	118 x 59 x 77 mm	
2 x N/C + N/C staggered, slow break contacts	XCKMR54D1H29EX	XCKMR54D2H29EX
2 x N/C + N/O snap action contacts, both actuated in each direction	–	
2 x N/C + N/O snap action contacts, 1 actuated in each direction	–	
2 x single-pole C/O snap action contacts	–	

(1) 2 entries fitted with blanking plugs, 1 entry fitted with ISO M20 cable gland

Other characteristics: please refer to the "Global Detection" catalogue

For more information, visit our site: www.telemecanique.com



XCKJ metal, fixed body, conforming to standard EN 50041

Linear (plunger)

Rotary (lever)

Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1

21 - 22

INERIS 04ATEX0014X / II 2 D-Ex tD A21 IP66/67 T85°C

Metal end plunger	Steel roller plunger	Steel roller lever	Thermoplastic roller lever	Variable length thermoplastic roller lever	Polyamide rod lever, Ø 6 x 200 mm
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30	25	30		20	
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0.5 m/s	1 m/s	1.5 m/s			
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– 20...+ 60°C

IP66

AC15; B300 (Ue = 240 V, Ie = 1.5 A)/DC13; R300 (Ue = 250 V, Ie = 0.1 A)

By 6 A cartridge fuse type gG (gl)

1 entry fitted with ISO M20 cable gland

30 x 60 mm

40 x 44 x 77 mm

XCKJ3961H29EX	XCKJ3967H29EX	XCKJ390513H29EX	XCKJ390511H29EX	XCKJ390541H29EX	XCKJ390559H29EX
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XCR metal

Rotary (lever)

Conveyor belt shift monitoring switches

Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1

21 - 22

INERIS 04ATEX0024X / II 2 D-Ex tD A21 IP65 T85°C

Square (6 mm) rod lever, spring return to off position	Thermoplastic roller (Ø 30 mm) lever, spring return to off position	Large thermoplastic roller (Ø 50 mm) lever, spring return to off position	Metal rod levers, "crossed", stay put	Galvanised steel operating lever	Stainless steel operating lever
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10				0.3	
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1.5 m/s					
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⊖					
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– 20...+ 60°C

IP65

AC15; A300 (Ue = 240 V, Ie = 3 A)/DC13; Q300 (Ue = 250 V, Ie = 0.27 A)

By 10 A cartridge fuse type gG (gl)

1 entry fitted with n° 13 cable gland

85 x 75 mm

85 x 75 x 95 mm

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XCRA111EX	XCRA121EX	XCRA151EX	XCRE181EX (2)	–	
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XCRB111EX	XCRB121EX	XCRB151EX	XCRF171EX (3)	–	
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–				XCRT115EX	XCRT215EX
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(2) "Crossed" rods (3) "T" rods



Type		Vacuum switches and vacu-pressure switches with setting scale		
Size		- 1 bar	- 0.2 bar	5 bar
Conformity		Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1		
Zone D (dust)		21 - 22		
EC type examination certificate number / marking		INERIS 04ATEX0058 /  II 2 D-Ex tD A21 IP66 T85°C		
Fluid connection		1/4" BSP female		
Electrical connection		Screw terminals, 1 entry fitted with ISO M20 cable gland		
Temperature range		- 20...+ 60°C		
Degree of protection		IP66		
Rated operational characteristics		AC15; B300 (Ue = 240 V, Ie = 1.5 A; Ue = 120 V, Ie = 3 A)/DC13; R300 (Ue = 250 V, Ie = 0.1 A)		
Short-circuit protection		By 10 A cartridge fuse type gG (gl)		
Setting range of upper limit (PH)		-0.14...-1 bar	-0.02...-0.2 bar	-0.5...5 bar
Body dimensions, W x D x H		55 x 77.5 x 158 mm	150 x 155.5 x 145 mm	113 x 35 x 75 mm
Fluids controlled		Oil, water, air, up to +70°C	Oil, air, up to +160°C	Oil, water, air, up to +70°C
Possible differential (subtract from PH to give PB) (1)	Min. at low setting	0.13 bar	0.018 bar	0.5 bar
	Min. at high setting	0.13 bar	0.018 bar	0.5 bar
	Max. at high setting	0.8 bar	0.18 bar	6 bar
Single-pole snap action contact		XMLBM02V2S12EX	XMLBM03R2S12EX	XMLBM05A2S12EX

(1) For XMLBM02V2S12EX and XMLBM03R2S12EX vacuum switches add to PB to give PH



Type		Pressure switches with setting scale		
Size		10 bar	20 bar	35 bar
Conformity		Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1		
Zone D (dust)		21 - 22		
EC type examination certificate number / marking		INERIS 04ATEX0058 /  II 2 D-Ex tD A21 IP66 T85°C		
Fluid connection		1/4" BSP female		
Electrical connection		Screw terminals, 1 entry fitted with ISO M20 cable gland		
Temperature range		- 20...+ 60°C		
Degree of protection		IP66		
Rated operational characteristics		AC15; B300 (Ue = 240 V, Ie = 1.5 A; Ue = 120 V, Ie = 3 A)/DC13; R300 (Ue = 250 V, Ie = 0.1 A)		
Short-circuit protection		By 10 A cartridge fuse type gG (gl)		
Setting range of upper limit (PH)		0.7...10 bar	1.3...20 bar	3.5...35 bar
Body dimensions, W x D x H		35 x 75 x 113 mm		
Fluids controlled		Oil, water, air, up to +70°C		
Possible differential (subtract from PH to give PB)	Min. at low setting	0.57 bar	1 bar	1.7 bar
	Min. at high setting	0.85 bar	1.6 bar	2.55 bar
	Max. at high setting	7.5 bar	11 bar	20 bar
Single-pole snap action contact		XMLB010A2S12EX	XMLB020A2S12EX	XMLB035A2S12EX



Pressure switches with setting scale				
0.05 bar	0.35 bar	1 bar	2.5 bar	4 bar
Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1				
21 - 22				
INERIS 04ATEX0058 / II2 D-Ex tD A21 IP66 T85°C				
1/4" BSP female				
Screw terminals, 1 entry fitted with ISO M20 cable gland				
- 20...+ 60°C				
IP66				
AC15; B300 (Ue = 240 V, Ie = 1.5 A; Ue = 120 V, Ie = 3 A)/DC13; R300 (Ue = 250 V, Ie = 0.1 A)				
By 10 A cartridge fuse type gG (gl)				
0.026...0.05 bar	0.045...0.35 bar	0.05...1 bar	0.3...2.5 bar	0.25...4 bar
200 x 204 x 145 mm	110 x 110 x 162 mm		55 x 77.5 x 158 mm	55 x 77.5 x 158 mm
Oil, air, up to +160°C			Oil, water, air, up to +70°C	
0.0014 bar	0.042 bar	0.04 bar	0.16 bar	0.2 bar
0.004 bar	0.05 bar	0.06 bar	0.21 bar	0.25 bar
0.04 bar	0.3 bar	0.75 bar	1.75 bar	2.4 bar
XMLBL05R2S12EX	XMLBL35R2S12EX	XMLB001R2S12EX	XMLB002A2S12EX	XMLB004A2S12EX



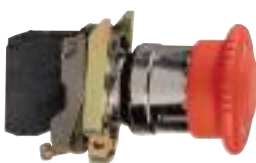
Pressure switches with setting scale			
70 bar	160 bar	300 bar	500 bar
Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1			
21 - 22			
INERIS 04ATEX0058 / II2 D-Ex tD A21 IP66 T85°C			
1/4" BSP female			
Screw terminals, 1 entry fitted with ISO M20 cable gland			
- 20...+ 60°C			
IP66			
AC15; B300 (Ue = 240 V, Ie = 1.5 A; Ue = 120 V, Ie = 3 A)/DC13; R300 (Ue = 250 V, Ie = 0.1 A)			
By 10 A cartridge fuse type gG (gl)			
7...70 bar	10...160 bar	22...300 bar	30...500 bar
35 x 75 x 113 mm			
Oil, up to +160°C			
4.7 bar	9.3 bar	19.4 bar	23 bar
8.8 bar	20.8 bar	37 bar	52.6 bar
50 bar	100 bar	200 bar	300 bar
XMLB070D2S12EX	XMLB160D2S12EX	XMLB300D2S12EX	XMLB500D2S12EX

Pushbuttons and mushroom heads

Contact functions



Type		Ø 22 pushbuttons with metal bezel					
Conformity		Directive ATEX D 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1					
Zone D (dust)		21 - 22					
EC type examination certificate number / marking		INERIS 04ATEX9004U /  II 2 D-Ex tD A21 IP65/66					
Mechanical durability (millions of operating cycles)		5					
Temperature range		– 20...+ 60°C					
Degree of protection		IP65 and IP66					
Mounting	Panel cut-out	Ø 22.5 mm (22.4 ^{+0.4} ₀ recommended)					
	Mounting centres	30 x 40 mm					
Depth below head		43 mm					
Connection		Screw clamp terminals					
Rated operational characteristics		AC15; A600 (Ue = 600 V, Ie = 1.2 A or Ue = 240 V, Ie = 3 A or Ue = 120 V, Ie = 6 A DC13; Q600 (Ue = 600 V, Ie = 0.1 A or Ue = 250 V, Ie = 0.27 A or Ue = 125 V, Ie = 0.55 A)					
Short-circuit protection		By 10 A cartridge fuse type gG (gl)					
Pushbutton type		Flush with transparent silicone boot					
Contact		N/O		N/C	N/O		
Colour of push		● white	● black	● green	● red	● yellow	● blue
References	Insertion of legend not possible	–	XB4BP21EX	XB4BP31EX	XB4BP42EX	XB4BP51EX	XB4BP61EX
	Insertion of legend possible	XB4BP181EX	–	XB4BP381EX	XB4BP482EX	XB4BP581EX	XB4BP681EX
Pushbutton type		Flush with coloured silicone boot					
Contact		N/O		N/C	N/O		
Colour of silicone boot		● white	● black	● green	● red	● yellow	● blue
References		XB4BPS11EX	XB4BPS21EX	XB4BPS31EX	XB4BPS42EX	XB4BPS51EX	XB4BS61EX
Ø 40 mushroom head pushbutton type		Spring return					
Contact		N/O		N/C	N/O		
Colour of push		● black	● green	● red	● yellow	● blue	
References		XB4BC21EX	XB4BC31EX	XB4BC42EX	XB4BC51EX	XB4BC61EX	



Type		Ø 40 mushroom head Emergency stop pushbuttons		
Conformity		Directive ATEX D 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1, IEC/EN 60947-5-5		
Zone D (dust)		21 - 22		
EC type examination certificate number / marking		INERIS 04ATEX9004U /  II 2 D-Ex tD A21 IP65/66		
Mechanical durability (millions of operating cycles)		0.3		
Temperature range		– 20...+ 60°C		
Degree of protection		IP65		
Mounting	Panel cut-out	Ø 22.5 mm (22.4 ^{+0.4} ₀ recommended)		
	Mounting centres	30 x 40 mm		
Depth below head		43 mm		
Connection		Screw clamp terminals		
Rated operational characteristics		AC15; A600 (Ue = 600 V, Ie = 1.2 A or Ue = 240 V, Ie = 3 A or Ue = 120 V, Ie = 6 A DC13; Q600 (Ue = 600 V, Ie = 0.1 A or Ue = 250 V, Ie = 0.27 A or Ue = 125 V, Ie = 0.55 A)		
Short-circuit protection		By 10 A cartridge fuse type gG (gl)		
Ø 40 latching mushroom head pushbutton type		Push-pull with trigger action	Key release (n° 455)	Turn to release
Contact(s)		N/C + N/O	N/C	N/C
Colour of push		● red	● red	● red
References		XB4BT845EX	XB4BS142EX	XB4BS542EX

Selector switches and key switches

Contact functions



Type		Ø 22 selector switches and key switches with metal bezel	
Conformity		Directive ATEX D 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1	
Zone D (dust)		21 - 22	
EC type examination certificate number / marking		INERIS 04ATEX9004U /  II2 D-Ex tD A21 IP65/66	
Mechanical durability (millions of operating cycles)		3	
Temperature range		– 20...+ 60°C	
Degree of protection		IP65	
Mounting	Panel cut-out	Ø 22.5 mm (22.4 $^{+0.4}_0$ recommended)	
	Mounting centres	30 x 40 mm	
Depth below head		43 mm	
Connection		Screw clamp terminals	
Rated operational characteristics		AC15; A600 (Ue = 600 V, Ie = 1.2 A or Ue = 240 V, Ie = 3 A or Ue = 120 V, Ie = 6 A DC13; Q600 (Ue = 600 V, Ie = 0.1 A or Ue = 250 V, Ie = 0.27 A or Ue = 125 V, Ie = 0.55 A)	
Short-circuit protection		By 10 A cartridge fuse type gG (gl)	
Selector switch type		Standard handle	
Contacts		N/C + N/O	N/O + N/O
Colour		● black	● black
References	2 position stay put	XB4BD25EX	–
	3 position stay put	–	XB4BD33EX
	3 position spring return to centre	–	XB4BD53EX
Selector switch type		Long handle	
Contact(s)		N/O	N/O + N/O
Colour		● black	● black
References	2 position stay put	XB4BJ21EX	–
	3 position stay put	–	XB4BJ33EX
	3 position spring return to centre	–	XB4BJ53EX
Key switch type		Key n° 455	
Contact(s)		N/O	N/O + N/O
Colour		● black	● black
References	2 position stay put, key withdrawal in LH position	XB4BG21EX	–
	2 position stay put, key withdrawal in both positions	XB4BG41EX	–
	2 position spring return, key withdrawal in LH position	XB4BG61EX	–
	3 position stay put, key withdrawal in centre position	–	XB4BG33EX
	3 position stay put, key withdrawal in all 3 positions	–	XB4BG03EX

Other characteristics: please refer to the "Human-Machine Interface components" catalogue

Illuminated pushbuttons and pilot lights

Contact and light functions (integral LED)



Type		Ø 22 illuminated pushbuttons with metal bezel				
Conformity		Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1				
Zone D (dust)		21 - 22				
EC type examination certificate number / marking		INERIS 04ATEX9004U /  II 2 D-Ex tD A21 IP65/66				
Mechanical durability (millions of operating cycles)		5				
Service life		100,000 hours at ambient temperature				
Temperature range		– 20...+ 60°C				
Degree of protection		IP65				
Mounting	Panel cut-out	Ø 22.5 mm (22.4 ^{+0.4} ₀ recommended)				
	Mounting centres	30 x 40 mm				
Depth below head		43 mm				
Connection		Screw clamp terminals				
Rated operational characteristics		AC15; A600 (Ue = 600 V, Ie = 1.2 A or Ue = 240 V, Ie = 3 A or Ue = 120 V, Ie = 6 A DC13; Q600 (Ue = 600 V, Ie = 0.1 A or Ue = 250 V, Ie = 0.27 A or Ue = 125 V, Ie = 0.55 A)				
Short-circuit protection		By 10 A cartridge fuse type gG (gl)				
Light source		Integral LED				
Illuminated pushbutton type, with integral LED		Flush with transparent silicone boot				
Contact		N/O		N/C	N/O	
Colour of push		● white	● green	● red	● yellow	● blue
References	LED voltage	24 VAC/DC	XB4BP183B5EX	XB4BP383B5EX	XB4BP483B5EX	XB4BP583B5EX
		48...120 VAC	XB4BP183G5EX	XB4BP383G5EX	XB4BP483G5EX	XB4BP583G5EX
		240 VAC	XB4BP183M5EX	XB4BP383M5EX	XB4BP483M5EX	XB4BP583M5EX
		24...120 VAC/DC	XB4BP183BG5EX	XB4BP383BG5EX	XB4BP483BG5EX	XB4BP583BG5EX



Type		Ø 22 pilot lights with metal bezel				
Conformity		Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1				
Zone D (dust)		21 - 22				
EC type examination certificate number / marking		INERIS 04ATEX9004U /  II 2 D-Ex tD A21 IP65/66				
Service life		100,000 hours at ambient temperature				
Temperature range		– 20...+ 60°C				
Degree of protection		IP65				
Mounting	Panel cut-out	Ø 22.5 mm (22.4 ^{+0.4} ₀ recommended)				
	Mounting centres	30 x 40 mm				
Depth below head		43 mm				
Connection		Screw clamp terminals				
Rated operational characteristics		AC15; A600 (Ue = 600 V, Ie = 1.2 A or Ue = 240 V, Ie = 3 A or Ue = 120 V, Ie = 6 A DC13; Q600 (Ue = 600 V, Ie = 0.1 A or Ue = 250 V, Ie = 0.27 A or Ue = 125 V, Ie = 0.55 A)				
Short-circuit protection		By 10 A cartridge fuse type gG (gl)				
Light source		Integral LED				
Pilot light type		Pilot lights with integral LED, plain lens				
Colour of LED		● white	● green	● red	● yellow	● blue
References	LED voltage	24 VAC/DC	XB4BVB1EX	XB4BVB3EX	XB4BVB4EX	XB4BVB5EX
		48...120 VAC	XB4BVG1EX	XB4BVG3EX	XB4BVG4EX	XB4BVG5EX
		240 VAC	XB4BVM1EX	XB4BVM3EX	XB4BVM4EX	XB4BVM5EX
		24...120 VAC/DC	XB4BVBG1EX	XB4BVBG3EX	XB4BVBG4EX	XB4BVBG5EX

Control stations

Complete stations, metal or plastic



Type		Complete control stations			
Type of operators		Ø 22 flush pushbuttons			
Conformity		Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1			
Zone D (dust)		21 - 22			
EC type examination certificate number / marking		INERIS 04ATEX0023 / II 2 D-Ex tD A21 IP65 T85°C			
Temperature range		- 20...+ 60°C			
Degree of protection		IP65			
Connection		1 entry fitted with ISO M20 cable gland			
Rated operational characteristics of contact blocks		AC15; A600 (Ue = 600 V, Ie = 1.2 A or Ue = 240 V, Ie = 3 A or Ue = 120 V, Ie = 6 A) DC13; Q600 (Ue = 600 V, Ie = 0.1 A or Ue = 250 V, Ie = 0.27 A or Ue = 125 V, Ie = 0.55 A)			
Short-circuit protection		By 10 A cartridge fuse type gG (gl)			
Function		1 function, Start or Stop		2 functions, Start - Stop	3 functions
Composition		1 spring return pushbutton		2 spring ret. pushbuttons	3 spring ret. pushbuttons
Contact(s)		N/O	N/C	N/O + N/C	N/O + N/C + N/O
Colour of pushbutton(s)		● green	● red	● green + ● red	● green + ● red + ● black
Metal control stations	Dimensions, W x D x H	80 x 77 x 80 mm		80 x 77 x 130 mm	80 x 77 x 175 mm
	Fixings: 4 x Ø 5.6 mm, centres	50 x 65 mm		50 x 115 mm	50 x 160 mm
References		XAWF100EX	XAWF110EX	XAWF210EX	XAWF310EX
Plastic control stations	Dimensions, W x D x H	85 x 70 x 146 mm			85 x 70 x 226 mm
	Fixings: 4 x Ø 5.6 mm, centres	70 x 105 mm			70 x 108 mm
References		XAWG100EX	XAWG110EX	XAWG210EX	XAWG310EX



Type		Complete control stations				
Type of operator		Ø 22 selector switch or key switch with metal bezel Ø 40 mushroom head Emergency stop				
Conformity		Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1				
Zone D (dust)		21 - 22				
EC type examination certificate number / marking		INERIS 04ATEX0023 / II 2 D-Ex tD A21 IP65 T85°C				
Temperature range		- 20...+ 60°C				
Degree of protection		IP65				
Connection		1 entry fitted with ISO M20 cable gland				
Rated operational characteristics of contact blocks		AC15; A600 (Ue = 600 V, Ie = 1.2 A or Ue = 240 V, Ie = 3 A or Ue = 120 V, Ie = 6 A) DC13; Q600 (Ue = 600 V, Ie = 0.1 A or Ue = 250 V, Ie = 0.27 A or Ue = 125 V, Ie = 0.55 A)				
Short-circuit protection		By 10 A cartridge fuse type gG (gl)				
Function		1 function, Start/Stop		Emergency stop		
Composition		1 selector switch (1) standard black handle	1 key switch (1) key n° 455	1 Ø 40 mushroom head turn to release	1 Ø 40 mushroom head key release	1 push/pull Ø 40 with trigger action
Contact		N/O + N/C	N/O + N/C	N/C + N/C	N/C + N/C	N/C + N/C
Colour of operator		● black	● black	● red	● red	● red
Metal control stations	Dimensions, W x D x H	80 x 77 x 80 mm				
	Fixings: 4 x Ø 5.6 mm, centres	50 x 65 mm				
References		XAWF130EX	XAWF140EX	XAWF174EX	XAWF184EX	XAWF198EX
Plastic control stations	Dimensions, W x D x H	80 x 70 x 146 mm				
	Fixings: 4 x Ø 5.6 mm, centres	70 x 105 mm				
References		XAWG130EX	XAWG140EX	XAWG174EX	XAWG184EX	XAWG198EX

(1) 2 position stay put

Other characteristics: please refer to the "Human-Machine Interface components" catalogue

Emergency stops and foot switches

Cable (tripwire) operated Emergency stops



For operating cable up to 50 m long		Latching, without indicator light			
Conformity		Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1			
Zone D (dust)		21 - 22			
EC type examination certificate number / marking		INERIS 04ATEX0015 / 			
Mechanical durability (millions of operating cycles)		0.01			
Temperature range		- 20...+ 60°C			
Degree of protection		IP65			
Connection		3 entries for ISO M20 cable gland			
Rated operational characteristics		AC15; A300 (Ue = 240 V, Ie = 3 A)/DC13; Q300 (Ue = 250 V, Ie = 0.27 A)			
Short-circuit protection		By 10 A cartridge fuse type gG (gl)			
Dimensions, W x D x H		229 x 82 x 142 mm		229 x 105 x 142 mm	
Reset		By booted pushbutton		By key release pushbutton (key n° 421)	
Operating cable length		≤ 50 m		≤ 50 m	
Operating cable anchoring point		To left	To right	To left	To right
References	N/C + N/O slow break	XY2CE2A250EX	XY2CE1A250EX	XY2CE2A450EX	XY2CE1A450EX
	N/C + N/C slow break	XY2CE2A270EX	XY2CE1A270EX	XY2CE2A470EX	XY2CE1A470EX

Foot switches, metal



Type		Single pedal switches			
Conformity		Directive ATEX 94/9/EC, EN 50014, EN 50281-1-1, pr IEC 61241-0, pr IEC 61241-1			
Zone D (dust)		21 - 22			
EC type examination certificate number / marking		INERIS 04ATEX0025 / 			
Mechanical durability (millions of operating cycles)		5			
Temperature range		- 20...+ 60°C			
Degree of protection		IP66			
Connection		2 entries for n° 16 (Pg 16) cable gland (1)			
Rated operational characteristics		AC15; A300 (Ue = 240 V, Ie = 3 A)/DC13; Q300 (Ue = 250 V, Ie = 0.27 A)			
Short-circuit protection		By 10 A cartridge fuse type gG (gl)			
Dimensions, W x D x H		104 x 172 x 59 mm			
Colour		Blue		Orange	
Contact operation		1 step	2 step	1 step	2 step
References	1 N/C + N/O	XPEM110EX	–	XPER110EX	–
	2 N/C + N/O	XPEM111EX	XPEM211EX	XPER111EX	XPER211EX

(1) 1 entry fitted with blanking plug, 1 entry fitted with n° 16 (Pg 16) cable gland



Automation platform

Weighing system for Modicon Premium



Module type		ISP Plus
		Supplied calibrated
Conformity		Directive ATEX 94/9/EC, EN 50014, EN 50020, EN 50039, EN 50284, EN 50281-1-1
Zone D (dust)		Mounted outside zone (to be used in conjunction with products for zone 21 or 22)
EC type examination certificate number / marking		LCIE 03ATEX6399X / II(2) G or/and D-Ex ib IIC T6 or IIB T6
Connection		By connectors: Sub-D 15-way male for sensors and Sub-D 9-way male for transfer of weights
Load cell inputs		50 measurements (for 1 to 8 load cells)
Outputs		2 discrete and 1 RS 485 for display
References	Without display	TSXISPY101
	With display TSXXBTH100	TSXISPY111

Intrinsically safe I/O modules for Modicon Quantum



Module type	Inputs/outputs				
	Discrete		Analogue		
Conformity	Directive ATEX 94/9/EC, EN 50014, EN 50020, EN 50284, EN 50281-1-1				
Zone D (dust)	Mounted outside zone (to be used in conjunction with products for zone 20, 21 or 22)				
EC type examination certificate number / marking	SIRA 02ATEX2345X /  II(1) G/D-[Ex ia] IIC				
Connection	By screw terminal block 140XTS33200 (to be ordered separately)				
Number of inputs	8	–	8	–	
Number of outputs	–	8	–	8	
Signal inputs	–	–	Thermal probes	0...25/20 mA	
			Thermocouple (1)	4...25 mA	
Resolution			12 bits + sign	0...25,000 points	15 bits
References	140DII33000	140DIO33000	140AII33000	140AII33010	140AIO33000

(1) Type J, K, E, T, S, R, B, mV



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